

# Antiquity

## A Quarterly Review of Archaeology

---

VOL. V No. 17

MARCH 1931

---

### Editorial Notes

ONE sometimes wonders whether these first few pages may not often be thought dull. It is not always easy to avoid preaching a sermon, but there are times—and the present is one of them—when there is no such temptation. The inexorable moment arrives when copy must be provided for the printer and it finds us in an oasis of southern Tunisia, in the land of the troglodytes. It is an almost rainless region with an ideal winter climate, and is little frequented by tourists, though the blight of the C.G.T. has to some extent affected it. When Bruun came here in 1893, the tourist was quite unknown, and the natives unspoilt. Railways and motor-roads have altered this, but one has only to go away a few miles from the track to shake off the less attractive results of 'western' influence.



The troglodytes live in the Matmata hills, whose chief 'town' is 27 miles south of Gabes, in that angle of the coast where it turns from south to east. The hills are reached by car from Gabes, along a rough but serviceable road. The first sight of the 'town' of Matmata is a very strange one, for one sees no houses! The people live underground like rabbits, in rooms excavated in the rubbly soil and opening out on to a central courtyard like a bear-pit. Entrance is by a narrow passage,

## ANTIQUITY

with side-chambers for stabling donkeys and camels and for storage of fuel. There are openings all round the bear-pit, each closed with a wooden door. These are the living rooms—long barrel-vaulted excavations, exactly similar to the Bronze Age burial-caves of Majorca.\* There are shelves along each side for storage-jars and occasionally for beds, and across the end is another shelf for smaller jars. Shallow cup-shaped depressions are made in the earthen shelving for the pots to stand in. At the end is a kind of 'dresser', like those which used to be so common in English cottages, and on it are the flotsam and jetsam of western civilization—empty wine bottles, old mirrors, empty picture frames, lids of biscuit tins—together with the finer products of native culture such as glazed plates. Facing the entrance is the loom, on which a burnous is being woven; beyond it is the bed, a structure of baked clay raised some three feet above the ground on clay legs.



Each bear-pit has several living rooms, with at least one kitchen, and a fowl-house. Each of the rooms has a bathroom consisting of a tiny side chamber with a bucket-shaped pit for the water. The camel, donkey, and watch-dog live side by side with the rest of the establishment, and the usual smaller parasites live in even closer association with everyone.



Now it is obvious that the unit is the single cave-room, and that the group of rooms opening on a bear-pit is a later development. It is equally obvious that this artificial cave has evolved from the natural cave. The existing structures are mostly of modern date, the oldest we saw being alleged to be 220 years old; but they are all constructed on a definite, traditional plan of great antiquity. May it not be that there is preserved in these remote hills a direct link with the cave-dwellers of palaeolithic times? Tunisia was the home of the Capsian industry, and Matmata is only 100 miles from Gafsa.



Such dwellings are only possible in regions of soft compact earth. Elsewhere in the district the cave has petrified into stone. All over the plains of the Medenine region are scattered shepherds' huts with

---

\*See W. J. Hemp, 'Rock-cut tombs and Habitation-caves in Mallorca', *Archaeologia*, 1927, LXXVI, 121-60.



## EDITORIAL NOTES

barrel-vaulted roofs, clearly modelled on the cave-room. Occasionally the hut is round and the roof dome-shaped, recalling perhaps the side-chambers of the cave. Medenine itself is a granary and market town which consists wholly of barrel-vaults placed one above the other, sometimes four stories high. They are again placed round a central square or courtyard, and the whole town consists of groups of such courtyards, the equivalent of the bear-pits. Even the modern town of Houmt Souk on the island of Djerba is built on this plan, though many of the houses themselves are of more normal type.



To one who has studied both it is obvious that there must be a close connexion between the caves of Majorca and those of Matmata. The Majorcan burial-caves are modelled on artificial habitation-caves, so that the antiquity of the plan goes back at least 3000 years, and may be far older. Is it not probable that the long-chambered tombs of the Mediterranean and of northwest Europe have a similar ancestry?—that the navetas of Minorca, the giants' tombs of Sardinia, the grottes of southern France and of the Marne, the *allées couvertes* and long barrows of Spain, Brittany and Britain are but translations into stone of a primitive cave-house?—and that the tholos-tombs of the Aegean and of Crete, and the round-chambered tombs of the West (from Gavv Inis, La Houge Bie, New Grange, and Maes Howe to the humbler structures of Cornwall and the Isles of Scilly) are similarly descended from the domed hut, which may in its turn be modelled on the less common round cave?



Is it not also probable that the megalithic temples (if such they be) of Malta—Hajar Kim, Mnajdra and Hal Tarxien—are but stone bear-pits? That they were built by a people who migrated thither from some North African region where the bear-pit type of house was usual? (Malta is only 280 miles from Matmata). The essence of the plan is the same in both.



We hope later on to expand these ideas into an article. What is required is for someone to make an intensive survey of the whole range of hills, for Matmata is merely a single village of a large group extending southeastwards into Tripoli. What is most needed is a series of

## ANTIQUITY

accurate plans of a few bear-pits. In the time at our disposal we could make only rough sketch-plans. To do more would require adequate preparation (the inhabitants are not always too friendly though they can usually be appeased in the time-honoured fashion). There could be no better subject for an anthropological student.



With the present number we begin our fifth year. We do so with no small satisfaction, for we feel that Number 17 at least maintains, if indeed it does not surpass, the standard achieved hitherto. It is no light task to keep afloat a journal devoted to pure science during a period of unparalleled industrial depression; and we are profoundly grateful to our supporters, who alone enable us to carry on. We would remind them yet once more that our 'margin of safety' is a narrow one, and that each subscription counts. The present year must necessarily be an anxious one, but we confidently look for a continuation of the support we have received during the past four years. The circulation of a journal like ANTIQUITY can only be maintained by continual effort; the Editors do not spare themselves, and they like to think that their work is appreciated. (One practical form of expressing appreciation is indicated below).


---

The SUBSCRIPTION to ANTIQUITY for 1931 is now DUE. We would remind our Subscribers of the form and envelope inserted in the December number and we shall be glad to have an early response. Many have been kind enough to send their cheques in advance and a large number pay by orders on their banks. This is much appreciated and *we hope that the remainder will save us avoidable trouble in having to send direct reminders to them.*

Payment should be made to

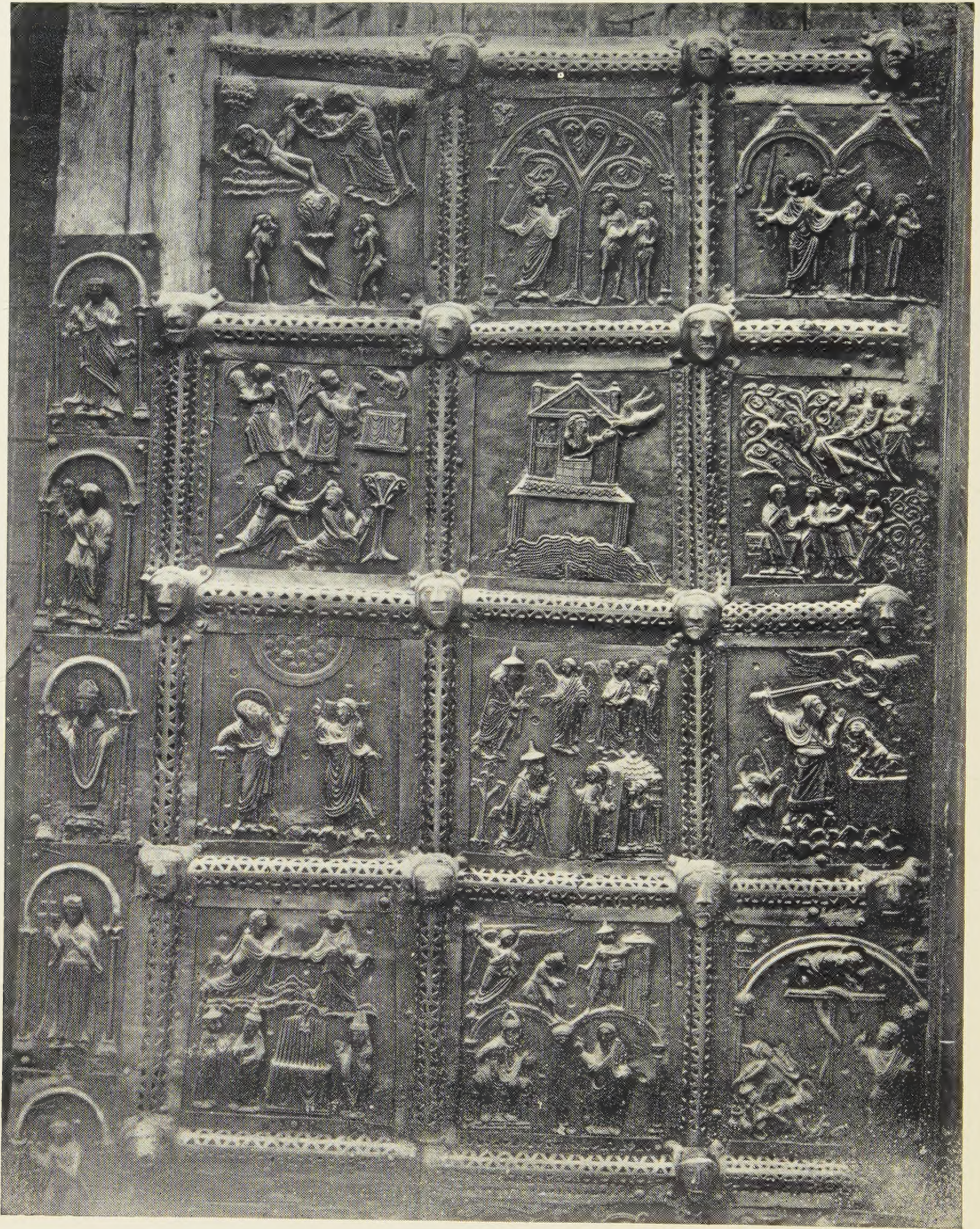
*The Assistant Editor, 24 Parkend Road, Gloucester.*





Digitized by the Internet Archive  
in 2024

PLATE I



BRONZE DOOR OF CHURCH OF SAN ZENO, VERONA (1139), AN EXAMPLE OF ARCHAIC DESIGN

*Ph. Anderson, Rome*



# Historical Cycles

by O. G. S. CRAWFORD

**H**ISTORY has been studied and histories written for more than two millennia. From time to time attempts have been made to discern some pattern or design running through it. But they have usually failed because the data have been inadequate. You cannot see the pattern of a carpet when only a minute portion is uncovered, and you cannot discern the pattern of history until large portions of it are available for examination. It was not until the 19th century that really long vistas were opened up by archaeological exploration in the East. Here, in Egypt, Mesopotamia and Crete, there were found the remains of forgotten civilizations ; and Sir Flinders Petrie, one of the pioneers in that work of epoch-making in the literal sense, has himself sketched an outline of the pattern he believes he can see emerging. The present essay is an attempt to interpret and explain that pattern.

Only from an altitude of five feet or so can the pattern of a carpet be seen ; it looks quite different when you are lying on the floor. In just the same way crop-markings on an ancient site can only be seen properly from above. To see the sweep of history rather than its details you must stand back and view it from a height of detachment.

History is the time-aspect of human affairs—the fourth dimension in which we cannot travel. The difficulty may be appreciated by a comparison with geography and the space-aspect. Geography is concerned with the surface of the earth, and is therefore essentially a study in three dimensions. Its primary objective is to construct a map of the whole world, and this task, now nearly complete, is performed by millions of measurements of lengths and angles. From this world-map gradually emerge certain generalizations, whose very existence may never have been suspected, even by the map makers themselves. The geographer, geologist and economist generalize upon the basis provided by the surveyor. The geologist can reduce to order the apparently chaotic mountain-ranges which cross the world from the Pyrenees to Patagonia. He can even forecast the probable existence of

## ANTIQUITY

strata, which, without the map, would for ever have remained unknown. (Thus was the Kentish coalfield discovered). These results have all been achieved within the last century or two, and they are made possible by the fact that we can travel in Space.

But we cannot travel in Time. We cannot live in ancient Greece or in Ur. It is impossible to compile a chart or chronological table of the past as complete and accurate in its own way as was our world-map. The most we can do is to laboriously piece together such fragments as survive, in written records or in the rubbish-heaps of buried cities. It must necessarily be a long time before generalizations can be built up on such foundations, before we can see the pattern of history plainly.

There is the added risk of seeing a pattern where none exists. With so many mere scraps of knowledge, the historian of mankind may be tempted to select only those which suit his purpose. But some kind of selective treatment is demanded. If the explanation suggested is the right one, *all* the facts—both those first selected and the rest—will eventually find their place in the scheme, or at least be found not inconsistent with it ; and the theory will come to be accepted. The theory of evolution was formed in this way, and it is of course still universally accepted. If the explanation here put forward can be used as the basis of forecasting, it will acquire additional merit.

Complete originality is not claimed for the ideas here suggested. Neither the organic concept of society (the view that it is a living organism) nor the rhythmical or wave theory of civilization is a recent invention. The one has been developed by many philosophers, by Comte, Spencer, Lilienfeld and Schäffle for instance. The other has been developed by Petrie<sup>1</sup> and Spengler—and doubtless by others. No one however, except Spengler, has brought the wave theory of civilization into relation with the organic concept of society and shown that the two are really inseparable. That is what I propose now to do, so far as that is possible within the limits of an article. To elaborate the theory, to clothe the skeleton with flesh, would demand a far greater knowledge of human history and of biology than I can possibly claim. It would be well worth doing. Meanwhile I feel impelled to say something about it, however inadequate, for, if the theory be true, it is obviously of very far-reaching importance.

---

<sup>1</sup> Sir Flinders Petrie's *Revolutions of Civilization* (Harper's Library of Living Thought, 3rd edn., 1922) was first published in 1911 ; but the author informs me that the main thesis was worked out by him many years before this date.



## HISTORICAL CYCLES

Sir Flinders Petrie's views are set forth in a little book of not more than 14,000 words—about twice as long only as this article. Civilization, he maintains, is intermittent ; it has its seasons—a spring of preparation, a summer of fulfilment, an autumn of decline and a winter of death. In each region cycles of civilization have succeeded each other several times ; and on each occasion the phases are marked by similar characteristics which may be detected by objective methods of study. The evidence of sculpture is valuable, partly because it is less perishable than most works of art ; admittedly, however, it 'is only one, and not the most important, of the many subjects that might be compared throughout various ages', but 'it is available over so long a period in so many countries' (p. 9). It is therefore used as the main, but not the only criterion in his survey. Others are painting, literature, music, mechanics and wealth ; political development is also brought into the scheme, though only occasionally referred to.

The region regarded as a composite whole is that of Europe and Egypt. The centre of gravity shifted within it from Egypt to Greece and thence to Rome and Western Europe ; but there was throughout the area a series of phases or waves of culture, separated by troughs. During the last 10,000 years or thereabouts he finds evidence of eight phases or Great Years. The first two are prehistoric ; then came five covering the whole dynastic period of Egypt ; last of all came the Classical and Modern (or West European) phases. It is possible to criticize the phases as Sir Flinders Petrie visualizes them, though there are few who have the range of knowledge required for such a task. What matters now is the *existence* of such phases, which some deny. To this main issue all others are subsidiary. We consider that Sir Flinders Petrie has proved his case quite conclusively. Ever since we first read the book twenty years ago, we have been testing the theory against the background of whatever we have at the time been studying, whether in books or museums or in the world of today ; and we have found it fit the facts. A theory which works is already half proved.

Each phase passes from archaism through maturity to decline. 'The careful working of detail separately, without treating it as part of a whole to be blended together, is the essential mark of archaism' (pp. 21, 22). Note, in passing, that this is a purely *objective* test, quite free from the bias of taste or prejudice and capable of being applied almost mechanically by an expert. Examples of archaism in art will probably occur to all. Such are the early Greek statues with the 'archaic' grin, preceding the period of classical maturity. In the



## ANTIQUITY

West European phase, archaic beginnings (as at Chartres) blossomed into maturity in the middle of the 13th century (as at Bamberg, Strasburg and Salisbury). The difference between archaism and maturity is well brought out by comparing the bronze doors of San Zeno at Verona with those panels of mature and almost over-ripe perfection on the doors of the Baptistery at Florence. (Plates I-III). The same cyclical evolution may be seen in medieval brasses and sepulchral effigies, the period of decline being clearly marked in the stiff and lifeless character of Elizabethan examples.

Similar features are observed in painting and the other arts which (it is claimed) reach their maturity in any given period, not simultaneously but in an orderly succession. Thus sculpture was the first to reach perfection both in the Classical and West European phases. Painting reached its zenith in West European art about 1500, literature about 1600, and music about 1800.

There is a tendency for each of these eight phases to last longer than its predecessor, and for the transition or hiatus between each to become greater and (for the people of the time) less uncomfortable.

The last phase before the present, the classical phase, is regarded by Petrie as a single phase. We think it possible however that it was a curve (or wave) with a double peak (or crest) represented by Greece and Rome respectively. It seems too that Rome began where Greece left off, perhaps after some recapitulation of the earlier stages. Is it not possible that the present phase of Western Civilization also has, though to a less degree, a double peak represented by Europe and America? There are many resemblances between modern America and ancient Rome; and Europe now plays in some respects the rôle of ancient Greece. Europe, like Greece, has been enfeebled by futile internecine strife and competitive armaments; but remains a storehouse of dead art to be ransacked by transatlantic connoisseurs. As M. Merlin has pointed out (ANTIQUITY, IV, 413) the Romans pillaged Greece in precisely the same manner.

For the rest the reader must consult the book itself, which is too compact and too full of ideas to be adequately summarized. This article assumes as proven the theory there set forth, and attempts to correlate it with a yet more inclusive generalization. Some day perhaps we may develop it in full.

A few words, however, must be said about the causes which Sir Flinders Petrie suggests as responsible for the existence of phases. Whether they wholly explain the cyclical development of culture may







BRONZE DOOR OF BAPTISTERY | Florence, by LORENZO Ghiberti (1378-1455), an example of mature Uffizi  
*Pl. Alinari*



## HISTORICAL CYCLES

perhaps be questioned. It is probable however that they are at least contributory causes, as he himself says. He points out that the phase or Great Year is heralded by invasion. Historically these invasions have generally been from colder into warmer lands, from regions where life is hard into those where it is easier. Inured to striving in their homeland, the invaders have developed by natural selection into a race of hardy folk ; and the impetus of their more energetic mode of life carries them forward, in the better land of their adoption, to greater and higher achievements than the natives. They ' thrive vastly ' there, ' until their tone is let down to their conditions ' (p. 125). There are, moreover, many new problems of adjustment to be solved. When this is achieved and a régime of living established, complete freedom of expression is soon gained and ' strife being ended, decay sets in shortly after '. The accumulation of capital contributes to the same result, by lessening the need of effort. ' The maximum of wealth must inevitably lead to the downfall ' (p. 126).

Changes of climate may be another contributory cause, and periods of desiccation do actually coincide with periods of migration, but they do not (Petrie thinks) account for the regularity of the phase. This he attributes to the lapse of time required to effect a complete fusion of different racial stocks, which he calculates should take from six to eight centuries, and the explanation, wherever it can be tested by the facts of history, seems adequate. ' The complete crossing of two races produces the maximum of ability, and . . . from that point repeated generations diminish the ability . . . But probably each of the other causes before noted may bear a part ' (p. 124). He concludes with the suggestion that ' eugenics will, in some future civilization, carefully segregate fine races and prohibit continual mixture, until they have a distinct type, which will start a new civilization when transplanted. The future progress of mankind may depend as much on isolation to establish a type as on fusion of types when established ' (p. 131).

As a corollary of this we would add that the longer a culture remains isolated, developing along its own lines, the more specialized it becomes and the less easy it is to cross it with another. It gradually becomes a different species. It is a biological fact that the mating of individuals of different species is infertile. Too great contrasts produce sterility. It seems also to be a rule of history that when a higher (or more advanced) culture invades and conquers a lower, it exterminates it, and often the people too. Thus the Roman invasion killed late Celtic art in Britain, and western civilization has proved fatal to many primitive races. The

## ANTIQUITY

invasion of one barbarism by another is also infertile and might perhaps be compared with the marriage of children. It seems as if the relative age of mating cultures has got to be exactly right, as well as the degree of their affinity.

The new phase is conceived when the invader-cells swarm in from without. The social body gradually takes shape ; the structural lines form and become more and more complex. With maturity comes full self-consciousness. With the approach of age the culture gradually loses energy until at last it dies, generally to be reborn in the same manner. These processes obey the laws of growth because they are life-processes. They cannot be forced. Violent attempts to do so generally fail (though sometimes they may be as necessary as a surgical operation). The way to stimulate growth is by means of educational propaganda.

What emerges from all this, is, we think, a generalization of wide and far-reaching importance, namely that *each phase of civilization has a life of its own, and may be regarded as if it were a species composed of living creatures*. The phase as a whole corresponds to the life of the species as a whole ; the units composing the phase at any given moment of history (the human beings) correspond to the individuals composing the species. Both come into existence and pass through maturity to decline and extinction, to be replaced as a rule by another phase or species issuing from it. The evolution of culture is exactly parallel to the evolution of organic life as a whole.

The idea is not of course new ; but it has never, we think, been effectively grafted on to the wave theory of civilization. One of its most recent advocates, Sir Arthur Keith, goes so far as to say<sup>2</sup> : ' The resemblance between the body physiological and the body politic is more than an analogy ; it is a reality '.

The cultural community is the unit, and, to conserve the analogy, it is a multi-cellular organism. But in point of fact multi-cellular organisms have evolved from a single cell, and if the analogy is a just one, we should find that communities have done so too. History tells us that they do. The unit of the multi-cellular organism is a single cell ; the unit of the community is a single human being.<sup>3</sup> We may take *Homo Sapiens*

---

<sup>2</sup> *Concerning Man's Origin* (Putnam, 1928), quoted in a most suggestive article on cancer in the *British Medical Journal* (5 October 1929, p. 607), by W. Sampson Handley, M.S., F.R.C.S.

<sup>3</sup> Barth regarded the family rather than the individual as the unit.



## HISTORICAL CYCLES

when he first appears as representing this unit, before its incorporation into the first community, represented, in a slightly advanced stage perhaps, by the city states of Sumer (Ur, Kish and so forth). The transition may have been relatively abrupt, for we now know that, up to about 5000 or 4000 B.C. the caves of Kurdistan were still inhabited by primitive stone-age individuals, as they had been for countless ages before. The *latest* relics found in the top layers of these caves correspond exactly with the *earliest* found in Sumer and in Assyria.<sup>4</sup> Clearly therefore at some date round about 5000 B.C. the solitary free-roving human cell was integrated into the multi-cellular organism of a community.<sup>5</sup> The same change occurred elsewhere, probably about the same time. The predynastic Egyptians succeeded the neolithic desert-rovers of the Sahara, and may well have been directly descended from them. The neolithic Cretans became the citizens of Cnossos.

Together with this integration, and as a necessary accompaniment of it, there developed specialization of function. The hunter is a law unto himself, self-determined and independent, just like the free-swimming cell. The citizen of a civilized community has already sacrificed much of his independence in exchange for more leisure and an easier mode of existence. Division of labour has arrived, and with it all the implications of the social contract.

The course of biological evolution is very similar. From the single cell there developed, some eleven hundred million years ago, 'organisms composed of many cells living together in a communal life like that of a small village or a great city. The cells are now specialized into groups, and each kind of cell follows a trade or profession, exerting for the community its special skill, receiving from the community in exchange food, warmth and protection. To carry out the scheme and to ensure that each cell receives its due share of food, and of such cell-products as it no longer makes for itself, elaborate systems of conduits—the circulatory, lymphatic and glandular systems—have been evolved; and equally elaborate machinery, comparable with the telegraphs,

---

<sup>4</sup> In caves near Sulaimanya in southern Kurdistan, Miss Garrod found Mousterian (old palaeolithic) flint implements in the lower layers, overlaid by a later palaeolithic layer and finally by a top neolithic layer containing painted pottery of the antediluvian Sumerian type. See *Bulletin of the American School of Prehistoric Research* (C. G. MacCurdy, Director), no. 6, March 1930, pp. 8-43.

<sup>5</sup> We may of course regard whatever lay between the solitary hunter and the village or city state as transitional and as corresponding perhaps to the early cell-aggregations of biology—such as flagellate colonies, sponges and polyyps.

## ANTIQUITY

telephones and newspaper and business offices of the city, brings information of the outer world, and controls the activities of the cell community'.<sup>6</sup>

Civilization advances by the integration of its cells into ever larger and larger organizations—from the family to the tribe, city and nation, and from nation to empire, confederacy and league. The process, as we have seen, is not continuous but spasmodic. The integrated multi-cellular community is an organism with a life-cycle of its own. The cycle ends with the break-up or death of the organism. The tribe is dispersed; the city is destroyed; the nation decays, shrivels up and disappears. But a new one generally<sup>7</sup> rises from the ashes of the old. The constituent cells, the individual human beings, live on; and though not individually immortal, like body-cells, they are so in bulk, and in effect.

It is this multi-cellular social organism<sup>8</sup>—or rather the species to which it belongs—that, during its phase of existence, passes through those stages which Sir Flinders Petrie has described. We may speak of this unit as a *culture*, a *civilization*, a *community* or (metaphorically) as an *organism*. These, however, are abstractions. What we are dealing with in reality is a unit or individual in four dimensions. The community—such as a city-state, for instance—has a geographical extension in three dimensions and a temporal one in the fourth. Its full content is, let us say, 200 square miles  $\times$  500 years.<sup>9</sup> This is perfectly plain when we are dealing with a multi-cellular organism like a human being, whose biography can be written. Civilization, when it first appears, represents life organizing itself again *de novo* at a higher level of consciousness, taking as its unit or *brick* an intelligent human being instead of an unintelligent cell. Obviously therefore our enquiry

---

<sup>6</sup> Handley in *B.M.J.* (op. cit. supra).

<sup>7</sup> But not always; some of the American civilizations for instance have vanished utterly and have not been replaced by any other.

<sup>8</sup> In the analogy we compare the life-history of a human community with the life-history of a species. But we compare the *organization* of that community to the organization (structure, function, etc.) of the individual multi-cellular organism. The human community recapitulates, as we shall see below, the life-history, not of the individual organism but of the species. But since the organism itself, as the species develops, recapitulates its own evolution, there is a general resemblance between the life-history of both organism and community.

<sup>9</sup> There is also of course a certain thickness, but for our present purpose this may be ignored.



## HISTORICAL CYCLES

into the origin and nature of a civilized community must begin with an investigation of the origin and nature of this human being ; just as the study of biology begins with the problem of the origin of the living cell from which all living things are descended. The biological problem is still unsolved, but there seems to be a fundamental difference—can it be merely one of *organization*?—between living and dead matter. The birth of life marks the beginning of a new chapter, though we cannot find the page in the book of nature.

So, too, there is an uncertainty about the precise moment when *Homo Sapiens* emerged from *Homo Insipiens*, but everyone recognizes the difference between, say, the most primitive savage and his lemurian ancestor. Another new chapter has been begun. It may be suggested that the essential change is from instinctive to intelligent reaction, or, stated in other terms, from passive adaptation to environment to active control of it. (This does not of course imply that instinct and adaptation cease to function ; we know that they do ; it is rather comparable with the fact that living matter retains many of the properties of dead matter, along with the new ones added). Man as such comes first upon the stage when he becomes a tool-making animal ; that marks the beginning of chapter 2, chapter 1 being the birth of life.

For countless ages man remained a solitary tool-using hunter. He improved his tools and evolved physically as an animal, from the stage represented by the Piltdown skull to that of the later cave-dwellers where, physically, he still remains.<sup>10</sup> Then, somewhere about 5000 B.C., when the Ice Age was practically over, he began a new chapter by discovering agriculture and the domestication of animals, and by ceasing to be a wanderer. That was the second epoch-making discovery of human history, for it made sedentary life in communities possible. Some freedom of movement was temporarily sacrificed for the innumerable compensations received in exchange. We are still living in this chapter.

The essence of this new integration of human society, is surely that it is, to a far greater extent than the first, a self-conscious unit. The degree of self-consciousness in a community may be relatively greater or smaller, but it is invariably present in some measure. By some it is nowadays called patriotism, by others group-consciousness. Patriotism in the last resort is merely the mutual offensive action and

---

<sup>10</sup> For an elaboration of this argument see my *Man and His Past* (Oxford, 1921), especially the first two chapters.

## ANTIQUITY

reaction of communities; it could not exist without an inherent potentiality of conflict. This new self-conscious unit has come into existence through the amalgamation of hitherto separate individuals. It is a new manifestation. It stands in the same relation to the individuals which compose it as does the whole body of an animal to the cells of its body. It has in fact evolved in much the same way. Why has it done so? Surely because, being a form of life, it obeys the laws of development of all living things and *recapitulates*. It is even possible to be more precise. If this is recapitulation, it should be of much shorter duration than that which is recapitulated. We do not, unfortunately, know how many years it took to evolve the first multicellular organism from the first cell, but we cannot err in reckoning it in hundreds of millions of years.<sup>11</sup> From the invention of tools to the first city state cannot have been more than a few hundreds of thousands of years at the outside, for man himself is not much older.

It next becomes necessary to determine, if we can, to what biological stage or stages belong the civilized communities of historic times. To do so we must examine the characteristics of a civilized community.

It is primarily a self-conscious unit acting as a single whole. This implies a single directing brain or seat of consciousness which can compel such action or rely upon its performance. 'The simplest rudimentary conception of political action is this, that one man imposes a command upon another'.<sup>12</sup> (There may, of course, be the complications of decentralized control, but they do not affect the main proposition). A civilized community has therefore definitely got beyond the stage of mere cell-aggregations. Perhaps the city state of Sumeria corresponds to a trilobite. It is in Sumer that we find the earliest clear manifestation of group-consciousness, represented, precisely as it should be, by the deification of the city itself. 'At Fara, the most primitive Sumerian site that has yet [in 1916] been examined, we find the god Shuruppak giving his own name to the city around his shrine, and Ninqirsu of Lagash dominates and directs his people from the first. Other city-gods . . . are already in existence . . . The authority of each god did not extend beyond the limits of his own people's territory. Each city was content to do battle on his behalf,

---

<sup>11</sup> See *The Science of Life*, by H. G. Wells, J. S. Huxley, and G. P. Wells, vol. I, p. 207 (table of geological formations with approximate relative lengths and duration in years).

<sup>12</sup> *Introduction to Political Science*, by Sir J. R. Seeley, London, 1896, p. 89.



## HISTORICAL CYCLES

and the defeat of one was synonymous with the downfall of the other'.<sup>13</sup> Here we have, at the very dawn of history, precisely what according to our theory we should expect to find—the self-consciousness of the new individual, the group, expressed in terms of religion, and its patriotism in terms of conflict.

The character of the community is best seen in action ; and in primitive civilizations external action is generally synonymous with warfare. Primitive tribal warfare, like the still earlier encounters of individual hunters, is the blind instinctive clash of conflicting interests, acting usually under the stimulus of hunger or sex. The reaction, too, is direct and immediate. The warfare of city-states probably proceeded from similar causes ; but it was less instinctive and more intelligently controlled. The warfare of European nations, or of groups of nations, probably represents the highest achievement of concerted group-action yet reached by the human race. It is therefore necessary to devote a few lines to it, in order to see more clearly what biological stage we have today reached in our recapitulation.

The organization of a modern army in the field is a very beautiful thing. Such an army is a most delicately adjusted living organism, whose morale—rightly prized very highly—is its soul. It consists also of brain and body ; the Commander-in-Chief is the brain ; the soldiers in the fighting-line are the body, or rather part of it. Impressions from the outer world (where the enemy resides) reach the brain through the organs of sense. In an army the flash-spotters and aeroplane-observers are the eyes, the sound-rangers the ears, the observers in the front line are like antennae or fingers, the Army Service Corps is the stomach and legs, the Corps of Signallers the nerves. Signals reach the Intelligence Department which, like the neopallium, co-ordinates the impressions received, and, itself a part of the brain, transmits them to that other part of itself which directs action, the Department of Operations. Thus informed the Will, the Commander-in-Chief, issues orders which travel along a hundred nerves each to its destination, and at zero point the army moves forward.

In its normal everyday life a community might act in a similar way, if there should be a centralized control and a well-developed group-consciousness. Some nations and city-states have thus acted at their maturity, when the civic body is still young and healthy and its reactions quick and senses keen. It can only do so even then when it

---

<sup>13</sup> L. W. King, *A History of Sumer and Akkad*, London, 1916, pp. 84, 85.

## ANTIQUITY

has a sovereign capable of directing its actions, and history shows that this combination does not often occur.

It is plain that some modern nations have reached, in their recapitulation, an already advanced stage. It would need a biologist's knowledge to give precision, however, to the analogy at this point, and this unfortunately we do not possess. Perhaps modern European states are passing through the stage of vertebrate or even mammalian life.\* Perhaps, however, they are merely having a reptilian nightmare on the road to mutual extermination, and the torch may be picked up later on by some now obscure racial group on the confines of western civilization. In favour of the first suggestion is the fact that modern states have a brain ; in favour of the second that it is a small and poor one and only used in extremities. Whichever equation we adopt, this advance from multi-cell to vertebrate (whether reptile or mammal) is of far shorter duration than that from a single cell to a many-celled organism ; and the corresponding advance from city-state to modern nation is proportionately shorter, as it should be. May we not conclude then, that there is a good case for regarding social evolution as a recapitulation of organic evolution ?

Before passing on to the next point it should be noted that in social as in biological evolution there is a main line or stem, with branches. Some organisms have branched off and have either become extinct or have remained down to the present day in their primitive state, living on side by side with their more advanced cousins. Some advance to a point and remain there, or go backwards. These branchings off occur at every stage. Palaeolithic hunters are now extinct,<sup>14</sup> but neolithic collectors survive in the Australian aborigines, and elsewhere ; just as primitive forms of life abound in every pond.

It has already been seen that, according to our theory, the phase or life-history (in Petrie's sense) of a society is equivalent to a species, whose evolution it recapitulates ; and that both evolve in the same kind of way, from simple to complex. In both, too, the most important fresh starts originate *not* from the most advanced members but from those which have not sacrificed their primitive plasticity to premature

---

\* Sir Arthur Keith, however (1924, p. 9) considers that 'the highest stage which has been yet reached by man in the evolution of human societies has hardly passed beyond Nature's lowest stage—that represented by sponges'. We have no room here to argue the point, which moreover is not relevant to our main thesis.

<sup>14</sup> Unless the Esquimaux be taken to represent them ; but the Esquimaux are not *solitary* hunters.



PLATE III



PANEL OF BRONZE DOOR AT FLORENCE, COMPLETED 1452, AN EXAMPLE OF MATURE SCULPTURE  
*Ph. Alinari*





## HISTORICAL CYCLES

and excessive specialization. It was the Nordic barbarians on the fringe of the Roman world who initiated the modern phase ; they were in touch with Roman civilization but not part of it. The classical phase was started by barbarians from Central Europe, in touch with the Aegean world but not of it. The last great advance in evolution was made by an insignificant little creature whose very existence was probably unknown to the reptilian overlords it eventually superseded.<sup>15</sup>

Looking at the process as a whole it would seem that life evolves in a spiral. It begins with a single cell. After countless ages of complex development an organism is evolved which becomes in its turn the unit of another cycle. We are back where we started but on a higher plane. The human being becomes the unit of organized society, and this, we must suppose, will evolve till it too in turn becomes the single complex unit or individual of yet another cycle. Clearly this process foreshadows the ultimate achievement of a single world-state, in which the whole human race shall be organized as a single social organism. This need not necessarily imply that every existing race and society will be at once incorporated in the world-state. When the last new start was made with the formation of human society, other forms of life, represented by other species of animals and plants, were not all caught up into the new organism, but only such as were of use to it and which could find a place in it, and those but gradually. Domestic animals and, later, plants—dogs, cats, horses, cattle, sheep, goats, pigs : corn, palms, olives, vines—were adopted and are still an essential element in human society ; they therefore survive. Those animals which do not, or which are definitely antagonistic to it, having refused to become incorporated, tend to become extinct. There were many more species in palaeolithic and even in neolithic times than there are today, and the extinction of the larger fauna is now proceeding with great rapidity.

We may therefore expect that those human societies and races which cannot be assimilated by the world-state will eventually die out.

This world-state is also foreshadowed by the international character of science. The growth of the conception of a pool of world-knowledge would be interesting to trace. There is now coming into existence a body of knowledge, collected by workers in this universal Intelligence

---

<sup>15</sup> See Professor Elliot Smith, Presidential address, Section H, British Association (Dundee, 1912), Report, pp. 575-98.

## ANTIQUITY

Department, for the use of future Directors of Operations. Unfortunately (as we think) thought has outstripped the means of action. The existing forms of political organization, though already out-of-date, make use of this knowledge not for the general good but for lower and more immediate ends, including that of mutual extermination. Still more unfortunately they are aided and abetted in this task by men of science themselves who should know better. Perhaps however the new phase can only arise from the chaos of the old one when it crashes ; so that the sooner this happens, the sooner the next phase will begin.

If this new cycle of evolution is to return spirally like the rest to a point immediately above its starting point, the world-state will be equivalent to the human being in organic evolution ; just as the present states were equivalent to some earlier animal. This must follow logically from the recapitulatory process now in progress, and may even be forecasted as its inevitable goal. The work of integration and reintegration of ' individuals ' persists and follows recognizable ' laws '. What the cell is to the human body, the human body is to the world-state. What is to be the next integration, in which the world-state will be merely the single unit, cell, or, as Professor Julian Huxley would call it, ' third grade individual ' ? Is there going to be another ? If there is it can hardly be of this world alone, since the whole world will be its body.

Can we extend the analogy backwards and detect the unit which is to the cell what the cell is to the human body ?

We can at least see that, if the analogy here sketched is sound, the evolution of life proceeds upon an orderly plan, intelligible and possibly predictable. We see that the very large is explicable in terms of the very small, just as in physics. In the probability-waves which determine the emergence of certain features of civilized life, we catch an elusive, perhaps delusive, yet fascinating glimpse of behaviour which seems to resemble the behaviour of the constituent ultimate elements of matter. Sometimes we think we can see some meaning in the dance of shadows upon the wall of the cave ; and then we lose it again. Was it really there ? Or was it only our own shadows that we saw ?

### NOTE I

No attempt has been made in the above article either to anticipate objections to the theory propounded in it, or to deal with criticisms which have been made about the cyclical view of history. It seemed



## HISTORICAL CYCLES

better to set down the writer's own ideas as clearly and as briefly as possible. Any other course would confuse the issue and expand the account to an impossible size. For similar reasons little reference has been made to previous writers, though acknowledgments have been made whenever the parentage of an idea or a statement was known. In addition to the books or articles already referred to the following may be quoted :—

*Social Adaptation : a study in the development of the doctrine of adaptation as a theory of social progress*, by Lucius Moody Bristol. *Harvard Economic Studies*, vol. xiv. *Harvard University Press* [Milford, London], 1915.

*Warfare in the Human Body : essays on method, malignity, repair and allied subjects*, by Morley Roberts. *Eveleigh Nash, London* [1920].

'Does Man's Body represent a Commonwealth?' by Sir Arthur Keith. *The R.P.A. Annual*, 1924, 2-12.

*Concerning Man's Origin*, by Prof. Sir Arthur Keith. *Watts, London*, 1927.

'The theory of Historical Cycles', by R. G. Collingwood. I. Oswald Spengler. *ANTIQUITY*, 1927, I, 311-325. II. 'Cycles and Progress', *ib. id.* 435-446.

Note of criticism on the above by Sir Flinders Petrie, published in *ANTIQUITY*, 1928, II, 207-8.

*The Ascent of Humanity : an essay on the evolution of civilization*, by Gerald Heard. *Jonathan Cape, London*, 1929. Reviewed in *ANTIQUITY*, 1930, IV, 5-11.

The above list does not claim to be in any sense a bibliography or even a complete list of 'books and articles consulted'. Some of these, and amongst them some of the most important, have been quoted already in the footnotes. Some account of the principal philosophers who have dealt with the subject will be found in the books quoted, particularly in the first mentioned (Mr Bristol's).

## NOTE II

The early stages of integration are naturally the most difficult to observe, partly because in them it is very difficult to say whether the *unit* is the evolving group or the individual forming part of it ;

## ANTIQUITY

and partly because historically the hypothetical nomadic precursors have vanished leaving but the scantiest traces of their existence. Their very mode of life ensures this. Precisely the same difficulty is encountered in biology. 'Which are the individuals of the colonial polyp *Obelia*—the polyps at the end of the branches or the colony as a whole? If separateness be the criterion the colony is the individual; but what then of the medusae, for a time part of the colony, then budded off to lead an independent existence? A single worker ant is separate and distinct enough; but it is not independent, and has no more biological meaning apart from the ant-community than has a human finger amputated from the body'. The writer decides that 'an individual is not a stable thing in itself, but rather a history, a series of events tied together and unified in a particular way'. In other words, individuality can only exist in four dimensions. 'It is a method of acting and becoming; it is never identical with itself for two consecutive moments of its career. When we take it at any given moment and examine it, it possesses . . . a certain degree of unity in its construction, a unity in space. When we look at it as a history, we find that it has a certain unity in time. The different events of its history cooperate to ensure its own continuance or the continuance of new systems like itself'.\* This description applies admirably to any one of Petrie's phases, or to any of its component units. The thread of unity here is provided by *tradition*, the outcome of speech and writing. (The writer's debt to this article of Professor Huxley's will be obvious, and he wishes gratefully to acknowledge it).

\* 'What is Individuality?' by Julian Huxley, *The Realist*, vol. 1, no. 1, April 1929, pp. 109-121.





PLATE I

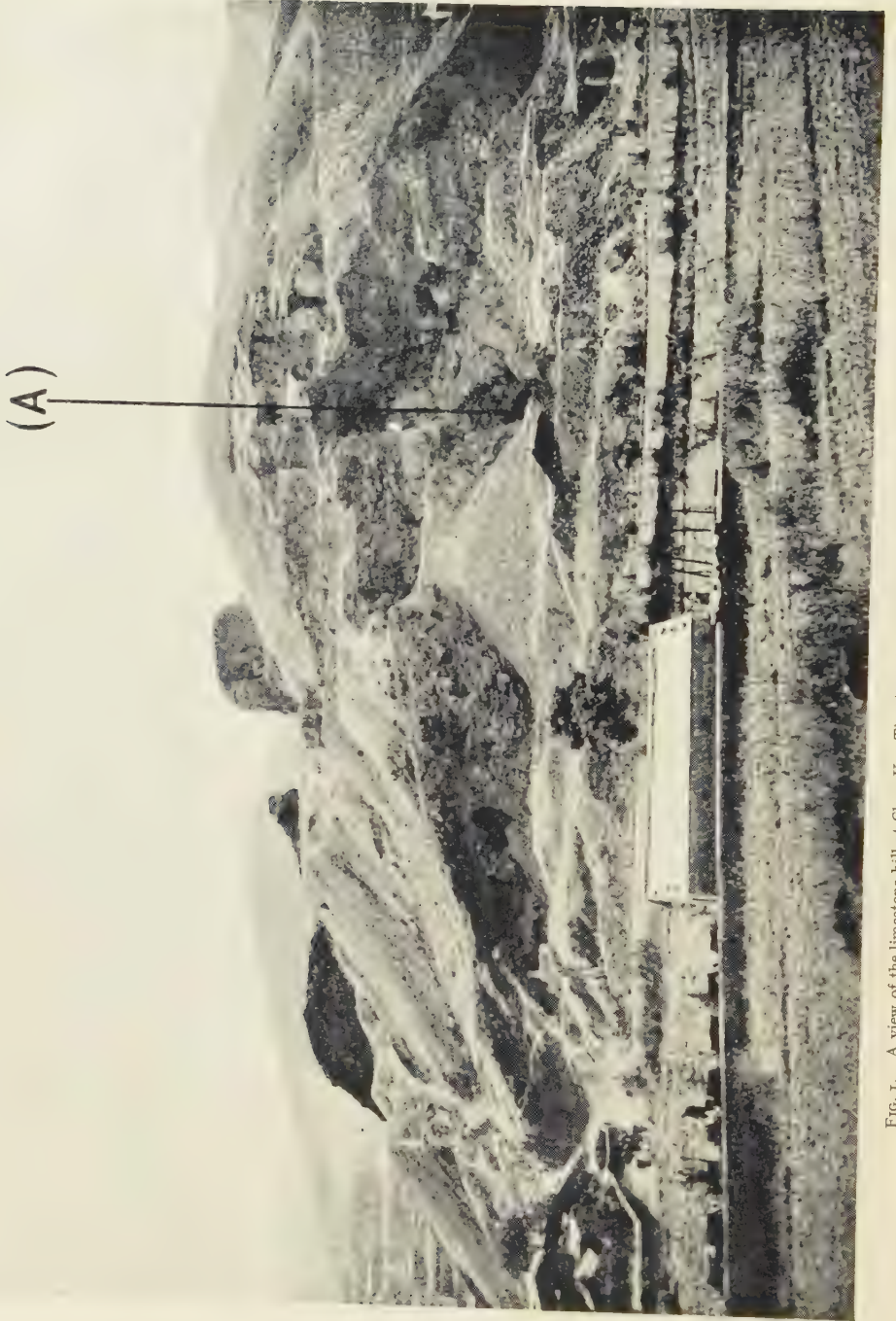


FIG. 1. A view of the limestone hill at Chou Kou Tien tunnelled by extensive caves, in one of which (indicated by line A) the fossil remains of the Peking Man were found



# The Discovery of Primitive Man in China

by G. ELLIOT SMITH

AT the time when Darwin published his *Descent of Man* comparatively little was known of the fossil remains either of men or apes, so that the discussion of the evidence of palaeontology played an altogether insignificant part in his argument. Apart from the discoveries that had been made in the Neanderthal cave and at Gibraltar, nothing was known of fossil man, and what little was known was puzzling rather than helpful. Little more had then been recovered of the fossil remains of apes than a few fragments of *Pliopithecus* and *Dryopithecus*.

During the sixty years that have elapsed since those times, however, the evidence of palaeontology has come to play an increasingly prominent part in the discussion of human evolution, until at the present day it is the aspect of the problem that appeals most to the man in the street when the question of man's origin comes up for consideration. It is only forty years since any really early remains of the human family were discovered, and it is a matter of some interest to discuss the circumstances which have led to the recovery of the remains of early Pleistocene man.

*Pithecanthropus* was discovered twenty years after the publication of Darwin's *Descent of Man*. There had been much discussion, not merely on the morphological side of the question, but also on the problems of geographical distribution of apes and men that so closely affected the problem of man's evolution. The anthropoid apes ranged from Africa and Europe in the west as far as the eastern limits of the original Asiatic continent at a time when it included Borneo and Java as part of the unbroken land-mass. But whereas the chimpanzee, gorilla, and *Dryopithecus* seem to have wandered towards the west from their original home in the region of the Siwalik Hills of northern India, the orang-utans seem to have preferred the Far East, where also the gibbons, after wandering west and east, have survived. Their presence in Borneo and elsewhere in the Malay Archipelago suggested the possibility that man's ancestors may also have gone east.

## ANTIQUITY

In the year 1890 Dr Eugène Dubois, a junior member of the staff of the anatomy department in the University of Amsterdam, was offered promotion to the position of prosector, which was the step towards the eventual attainment of the full professorship. To the surprise of his colleagues he declined this promotion, and surprise turned to amazement when he gave the reason that he was going out to the East Indies to search for fossil remains of primitive man! He was impressed by the fact that as the western area of migration of the higher Primates had failed to provide any conclusive evidence of really early man, it might be worth exploiting the possibilities of the eastern route and determining whether the archaic members of the human family may not have followed the footsteps of the ancestors of the orang-utan. He resigned his position in Amsterdam and went out to the Indies as an army doctor, and began to search among the Pleistocene and Pliocene fossiliferous gravels in Java for the object of his quest. The most amazing aspect of this adventure was Dr Dubois's discovery of the sort of thing that had inspired his mission. In 1891 he found in the gravels on the banks of the Solo river, which natives of central Java refer to as Bengawan or 'Great River', the fossilized remains of a braincase, a couple of teeth and a femur. When these fossils were shown at the International Congress of Zoologists in Leyden in 1894 they provoked a controversy which has continued ever since then.

In the first place the nature of the braincase was a matter of dispute—whether it was part of a hitherto unknown gigantic ape or of an equally unknown primitive type of human being, or as Dr Dubois himself maintained, a creature that was not strictly either simian or human, but a link between the two, the position of which was so enigmatic that it would be misleading to call it either an ape or a man. This problem, in spite of nearly forty years of discussion, is still in dispute. Although the majority of anthropologists admit *Pithecanthropus* to membership of the human family, there is still wide divergence of opinion as to what his position in the family is, whether he is in the direct line of descent of later men, or whether he represents a specialized and divergent member of the family. Then again there is the question as to whether or not the teeth and the thigh bone which were found in the same gravels, and in a similar state of fossilization, are parts of the same or similar individuals, or whether the femur of a more definitely human type of being happened to be deposited in the same bed of gravel with the remains of the Ape-man, who was a fantastic caricature of a human being. There are the widest divergences of opinion even at



## DISCOVERY OF PRIMITIVE MAN IN CHINA

the present time on this issue. Then again the question of the geological age of the fossils has been a subject of controversy. When Dr Dubois first discovered the fossils he was impressed by the fact that the associated mammalian remains seemed to be identical with types which occur in the Pliocene beds in the Indian Siwaliks. Hence he regarded the fossils as evidence of the former existence in Java of Tertiary man. The further study of these remains, and in particular the gradual accumulation of knowledge regarding the fossil mammalia of Asia, have since convinced most palaeontologists that the age of the Java fossils is Pleistocene and not Pliocene. Two years ago (22 February 1929) Professor Henry Fairfield Osborn, the President of the American Museum in New York, called attention (*Science*, vol. 69, p. 216) to certain facts, which had impressed Professor Dietrich of Berlin and himself, that the Proboscidean and other mammalian remains associated with the human fossils belong not to the Early Pleistocene but to the Middle Pleistocene Age, suggesting that the Ape-man of Java was relatively much more recent than had hitherto been supposed.

The total result of these discussions is that the precise age and the significance of the fossils found by Dr Dubois forty years ago are still matters of lively controversy and considerable doubt.

More than twenty years ago the late Mr Charles Dawson, a lawyer practising at Lewes in Sussex, who had then devoted more than thirty years of his life to the hobby of hunting for fossil remains of extinct animals in the Weald of Sussex, was attending a land court at the Manor of Barkham near Piltdown, when he noticed the road leading up to the manor house being repaired with flint. During the sitting of the manorial court over which he was presiding, instead of giving the whole of his attention to the legal business in hand, he was unable to restrain his roving fancies from wondering why people should be using such poor material as flint to repair a road when, as he thought, the cost of bringing it from the nearest source known to him, which was more than five miles away, would have been almost sufficient to have paid for proper road metal. Hence, as soon as the court rose for lunch he went out to make further enquiries, and discovered from the workmen that the reason why flint was being used was that it was present on the spot. The road itself crossed the small patch of gravel which the men were digging up to mend it. Mr Dawson instructed the workmen to keep a look-out for any fossil remains which they might find in this bed of gravel, and from time to time, whenever any excavation was going on, he visited Barkham Manor to keep a watch on the excavation.

## ANTIQUITY

Eventually in 1912, when he visited the spot he found the workmen, in defiance of the instructions he had given them, throwing stones at what they thought was an old coconut obtained from the gravels. He at once rescued the fossilized remains of a piece of a phenomenally thick human braincase, and began excavating there and recovering other pieces. The massiveness of the skull and the Pleistocene age of the deposits suggested to Mr Dawson's mind that he had found part of the braincase of the only Pleistocene man at that time known in Europe. The Heidelberg jaw had been found four years previously and is all that we know of this peculiar type of the human family which probably represents the distinct genus of *Palaeanthropus*. He therefore took this fragment to Dr (now Sir Arthur) Smith Woodward, at that time Keeper of Geology at the British Museum (Natural History), and they set to work to dig the gravels at Piltdown.

In the summer of 1912 they found a fossilized jaw which at once convinced them that they were dealing with a creature totally distinct from the Heidelberg man—one who was very much more primitive and ape-like and also much older even than that Pleistocene man of Germany. The announcement of these discoveries, at a meeting of the Geological Society in London in December 1912, started a series of controversies which were even livelier and more confusing than those which had raged since 1894 around *Pithecanthropus*. For there was not only the same element of doubt as to the significance and age of the Piltdown fragments, but there were several new elements of controversy in the Sussex discoveries. The question of age was subject to the same uncertainty as I have mentioned in the case of *Pithecanthropus*; the fragments of bone had been deposited by running water in gravels; and in these gravels there were the remains of Pliocene as well as Pleistocene mammals. As the skull itself showed no signs of rolling, such as many of the Pliocene fossils displayed, it was assumed that it was contemporaneous with the undamaged Pleistocene fossils. But there were many elements of uncertainty in the determination of the geological age of the specimens, and recently Professor Osborn has been putting forward a view in opposition to the one which is now commonly accepted, that the Piltdown skull may possibly be Tertiary in age and not Quaternary as was supposed. 'The problem is whether it came from a Pliocene gravel bank with a primitive elephant and mastodon, or from a Pleistocene gravel bank with a primitive hippopotamus' (*Science*, 1929, p. 217). There has, moreover, been the liveliest discussion as to whether or not the jaw which was found at



## DISCOVERY OF PRIMITIVE MAN IN CHINA

Piltdown was not that of a chimpanzee rather than of a human being. Even after eighteen years of discussion there is no complete consensus of opinion upon this issue. The problem of the precise mode of reconstruction of the skull gave rise to unseemly and wholly unnecessary discussions which served to create a widespread confusion in the minds, not merely of the general public, but even of anatomists and palaeontologists, and profound doubt as to the importance and precise significance of this great discovery in Sussex. This lack of confidence in the validity of the remains of *Pithecanthropus* and *Eoanthropus* was intensified by the fact that these two doubtful members of the human family were so dissimilar that they seemed to be hardly compatible with one another. This increased the doubt as to whether two primitive members of the human family who were supposed to be roughly contemporaneous one with the other—that is, Early Pleistocene in age—could differ so profoundly as these two skulls did, although the whole breadth of the great continent of Europe and Asia separated them from one another. So profound is the scepticism concerning Piltdown Man that important treatises on the fossil remains of man published in Germany during the last few months have either refrained altogether from referring to the Piltdown discovery (which obviously is of crucial importance) or have stated that the issue is so doubtful as to be excluded from the argument.

Even those of us who have always been convinced that both *Pithecanthropus* and *Eoanthropus* were genuine members of the human family, were somewhat puzzled to know how to define their relations to one another, and precisely what light they shed upon the process of the evolution of later types of human beings.

The discovery of *Sinanthropus* in China has put an end to this uncertainty and marks a new epoch in human palaeontology. The skull found at Chou Kou Tien, on 2 December 1929, has dissipated the chief elements of doubt and uncertainty in regard to the other two genera of the human family, for it not only provides us with much fuller and unequivocal information concerning a third and hitherto unknown genus of early Pleistocene man, but in addition it establishes a bond of union between the other two types, and shows that the Ape-man of Java and the Dawn-man of Piltdown are not really incompatible with one another. Many of the most characteristic features of these two divergent types are combined in the same individual of the genus *Sinanthropus*. Hence it clears away the mists of doubt and suspicion. Thus the discovery in China is not only a tremendous contribution

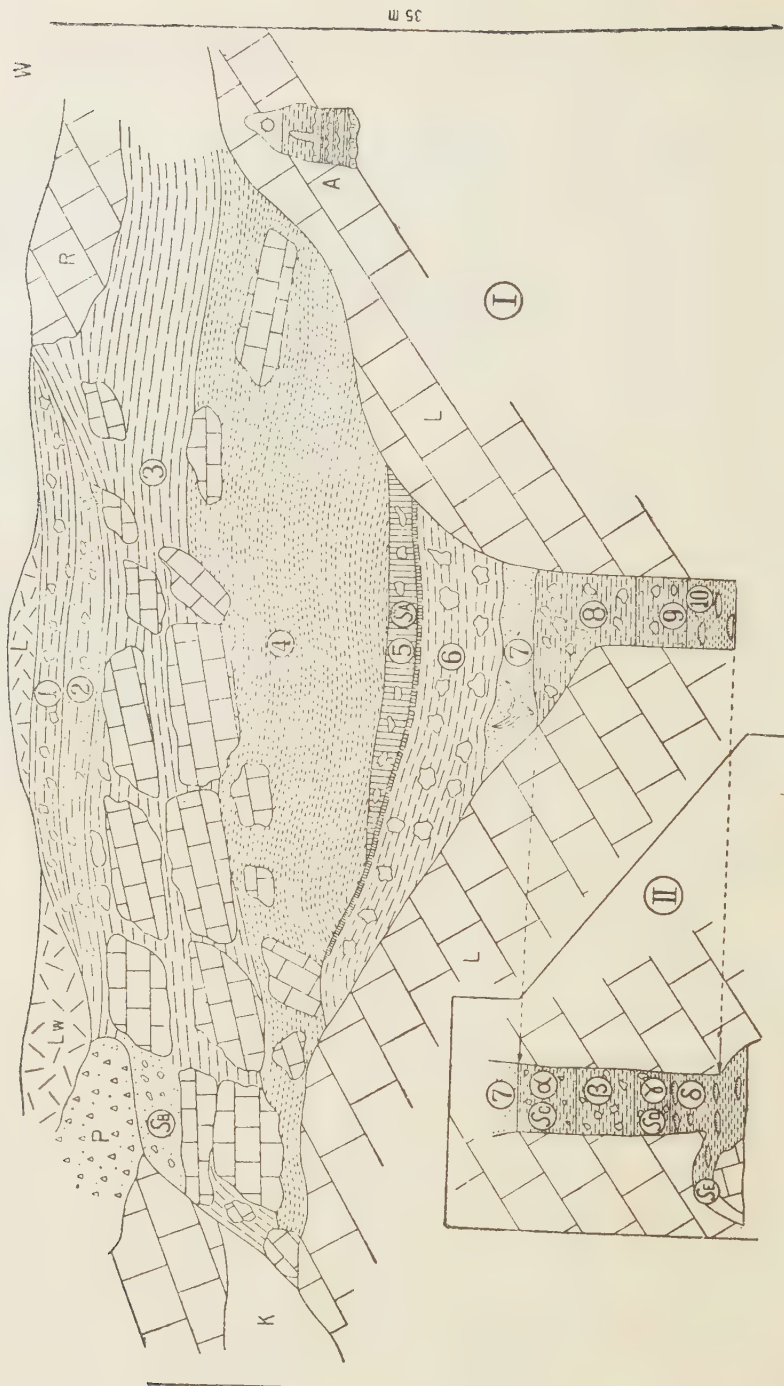


FIG. 2. Diagram of a section prepared by Father Teilhard de Chardin and Dr C. C. Young to illustrate the geological condition of the cave, and the series of ten layers, all of Early Pleistocene age. At each of the spots marked S in the diagram human remains were found



## DISCOVERY OF PRIMITIVE MAN IN CHINA

to the exact knowledge of early Pleistocene man, but in addition it gives a respectability to these other early men, whose remains were being discredited, and a coherence to our knowledge of all three types which thus establishes upon a sure foundation our knowledge of the most primitive men so far recovered.

The discovery of the Peking remains is a romantic story, differing from the finding of the other two genera, just as the nature of the circumstances under which the fossils were deposited differs from those revealed in Java and in Sussex respectively. The remains of the Peking man were not deposited by running water in river gravels, but left by their original owners on the floor of a cave of Ordovician limestone where they and a large series of mammals dwelt in Early Pleistocene times. Hence the geological age is certain. The elements of doubt which arise in the case of *Pithecanthropus* and *Eoanthropus* do not arise in the case of *Sinanthropus*.

Nearly thirty years ago Dr Haberer purchased in a druggist's shop in Peking a collection of 'dragon's bones' which he sent to Professor Max Schlosser in the University of Munich. Shortly afterwards, in 1903, Professor Schlosser published (in *Abhandlungen der königl. Bayerisch-Akademie, Wissensch. Math. Phys. Klasse*, Bd. XXII, p. 20-21, 1903) a memoir under the title 'Die fossilen Säugethiere Chinas nebst einer Odontographie der recenten Antilopen', giving his identifications of the series of fossil remains he was able to recognize among this collection of Chinese drugs. On pages 20 and 21 of this memoir there is a section called 'The Description of the Primate Types', which is of such exceptional interest and importance that I shall translate that portion of the description which is defined as '? Anthropoide g.n. et sp. ind. '? In his account Professor Schlosser says, 'In the collection recently sent by Dr Haberer from Peking there was a left upper third molar, either of a man or a hitherto unknown anthropoid ape. This tooth is completely fossilized and is quite opaque. Moreover it exhibits between its roots a reddish clay such as is found only in teeth which belong to the Tertiary period and are earlier than the loess. Hence it is probable that a Tertiary age should be ascribed to the specimen. Unfortunately the tooth is already much damaged and its surface corroded by the roots of plants, so that the original appearance of its surface cannot be accurately determined'. After giving an account of the position of the various projections on the surface of the crown in comparison with other teeth, and describing the form of the body of the tooth and its roots with their

## ANTIQUITY

respective measurements, Professor Schlosser proceeds to consider how to determine the zoological status of the original possessor of the tooth. The form of the tooth and morphology of the roots are distinctly man-like. On the other hand the state of preservation of the tooth makes it clear that it is of remote antiquity, possibly as old as the Tertiary period, which suggests the improbability of it belonging to the genus *Homo*. In fact the Tertiary existence of any type of man is not yet established. Hence the possibility has to be considered whether this tooth may belong to a hitherto unknown genus of anthropoid ape, which in the structure of its teeth approached more nearly to man than any other known anthropoid ape. Another possibility, he says, is that the tooth may be that of a human being which in some way became displaced and got into the Tertiary beds although belonging to a more recent period. He suggests, for instance, that possibly the tooth was only of Pleistocene age, which raises the difficulty that the state of fossilization is such as he has only found in teeth which are either Tertiary in age or are referable to the very beginning of the Pleistocene. He admits that he cannot pretend to distinguish between the state of fossilization between the earliest Pleistocene and the Tertiary. He admits that a definite answer to this riddle must necessarily be only tentative—for no other early human remains except *Pithecanthropus* were then available for comparison. No useful purpose would be served by comparing this third molar tooth (with its marked difference in size and much more strongly reduced roots) with the tooth of *Pithecanthropus*, the roots of which were much more exceptionally divergent. He calls particular attention to the fact that the fossil found in China presents a much nearer likeness to the tooth from the Indian Siwaliks which Lydekker has described as *Troglodytes sivalensis*, to which Dubois refers as *Palaeopithecus sivalensis*. The third molar tooth in this Indian anthropoid presents a close resemblance to the Chinese tooth. It is distinguished, however, only by relatively slight differences in size and the position of the roots. After detailed comparisons between these teeth of fossil anthropoids and primitive men (including *Pithecanthropus* and the Neanderthal remains from Krapina) Schlosser refers to the possibility that the tooth from Peking may be the remains of the oldest human being known at that time and one that displayed a closer likeness to the apes than any other known fossil. While admitting that, however unpardonable it might be tacitly to evade the issue, it is important to try and define a systematic position which obviously could not be finally determined by the scanty evidence at that time available.



## DISCOVERY OF PRIMITIVE MAN IN CHINA

Hence he defines the aim of his communication to suggest to later investigators who may enjoy the privilege of carrying out excavations in China the desirability of searching for the remains either of a new fossil anthropoid, a Tertiary man or an early Pleistocene human being. In recording the complete realization of the third possibility adumbrated by the veteran German palaeontologist, it would be unpardonable not to refer to Professor Schlosser's insight and courage. He correctly predicted the age and the nature of the type of being whose damaged tooth came into his possession without any indication either of its provenance or of the geological circumstances under which it had been recovered. One cannot withhold admiration for his wonderful imagination which enabled him to make this amazingly accurate prediction, which the last three years in China have so amply corroborated.

This brilliant forecast was made in 1903, but nothing further was done towards the realization of it until the year 1921, when Professor J. Gunnar Andersson, the Swedish geologist who was acting as the Adviser to the Geological Survey of China, was directed to a deposit of fossil bones at Chou Kou Tien through overhearing the chatter of his native workmen. When he started to examine the rich deposit of fossil bones in the cave at Chou Kou Tien he found amongst these remains a piece of quartz, and at once remarked to his assistants, 'This is primitive man', implying by that statement that as quartz did not naturally occur in this spot, some early Pleistocene human agency must have been responsible for its presence among the bones which he was examining. In a way this statement is almost as remarkable as that which Professor Schlosser had made over twenty years previously.

The funds available for the Chinese Geological Service were inadequate to carry out the examination of these fossils with the thoroughness which their importance merited, but Dr Andersson obtained from Mr Ivar Kreuger of Stockholm financial aid which enabled the investigations to be continued and extended.

The material obtained from Dr Zdansky's excavations at Chou Kou Tien in 1922 was taken to Professor Wiman's laboratory in Upsala for examination ; and in 1926, on the occasion of the visit of the Crown Prince of Sweden to Peking it was announced that two human teeth had been found, an immature left lower molar, and a somewhat worn adult right upper premolar.

In the *Bulletin* of the Geological Society of China, 1927, vol. 5,

## ANTIQUITY

nos. 3-4, p. 284, Dr Zdansky gave an account of these teeth, the concluding two paragraphs of which I quote in his own words :—

‘ Granted the human origin of the teeth, there arises the question of their relation to the living and prehistoric races of man. . . . I am indeed convinced that the existing material provides a wholly inadequate foundation for many of the various theories based upon it. As every fresh discovery of what may be human remains is of such great interest not only to the scientist but also to the layman, it follows only too naturally that it becomes at once the object of the most detailed—and, in my opinion, too detailed—investigation. I decline absolutely to venture any far-reaching conclusions regarding the extremely meagre material described here, and which, I think, cannot be more closely identified than as *Homo sp.*’.

‘ The above has been written largely because I find I am credited, in certain quarters, with the discovery of the ‘ Peking Man ’ (*vide* daily newspapers), which is supposed to be of Tertiary age. Leaving until a future date the publication of a detailed description of the fossil fauna from Chou Kou Tien, my purpose here is only to make it clear that my discovery of these teeth (which are of Quaternary age) should be regarded as decidedly interesting but not of epoch-making importance’.

Professor Davidson Black, however, took a different view of the significance of the teeth. To him they were definitely of epoch-making importance. Moreover he had the courage to act upon his conviction. He had been profoundly influenced by the memoir published in 1915 by the late Professor W. D. Matthew, F.R.S. ‘ Climate and Evolution ’, (*Annals of the New York Academy of Science*, xxiv, 171). In fact, the possibility (suggested by Dr Matthew’s argument) of the discovery of primitive man in China decided Dr Davidson Black to accept the invitation, which he received after the war, to join the staff of the Anatomy Department in the Peking Union Medical College. The reality of Dr Black’s conviction was known to me, not only by statements in his private letters, but also in the memoir which he published in 1925 entitled ‘ Asia and the dispersal of Primates ’, (*Bull. Geol. Soc. China*, vol. iv., no. 2, p. 133). Hence when, a year later, Dr Zdansky found human teeth in the early Pleistocene or, as was then thought, late Pliocene, beds, Professor Davidson Black regarded this as a definite realization of the aim which he had set before him several years before, and naturally regarded the discovery as truly epoch-making.



## DISCOVERY OF PRIMITIVE MAN IN CHINA

In a communication which, at the request of Dr Andersson, he made at the scientific meeting held in Peking on 22 October 1926, he emphasized these considerations, and was able to interest Dr Henry Houghton, then Director of the Peking Union Medical College, and Mr Edwin Embree, then Secretary of the Rockefeller Foundation, to support an appeal for financial help to carry on the search at Chou Kou Tien. The late Dr Richard Pearce, at that time Director of the Medical Division of the Rockefeller Foundation, so far appreciated the significance of the possibilities that he was able to induce the Foundation to make an appropriation for two years' work on the site.

This project met with immediate success, for on 16 October 1927, Dr Birger Bohlin found a human lower molar tooth in the deposit at Chou Kou Tien, where Dr Zdansky found the teeth reported on 22 October 1926. On 2 December 1927, Dr Davidson Black announced to the Geological Society of China this important discovery and his courageous decision to use it as evidence for the creation of a new genus and species of the Human Family.

On the suggestion of Dr A. W. Grabau, Professor of Palaeontology in the National University of Peking, he called it *Sinanthropus pekinensis*. The age of the deposits in which the fossils were found was thought at this time to be Upper Pliocene; but a more careful sifting of the evidence provided by the associated mammals subsequently led the geologists to decide that the real age was Lower Quaternary (very early Pleistocene). Professor Schlosser in 1903 and all subsequent writers for the next quarter of a century believed that fossils found in deposits earlier than the loess of the Chili plain were Pliocene. But investigations during the season 1927-28, fully recorded in the exhaustive report published by Père Teilhard de Chardin and Dr C. C. Young (*Bulletin of the Geological Society of China*, 1929, p. 173), established the age of the fossils as Early Pleistocene.

Dr Davidson Black claimed that the morphology and the proportions of the tooth left no doubt either of its human origin or of the fact that it is generically distinct from all other known human types. He came to the conclusion that its original possessor was a child corresponding in age to that attained by modern children at eight years, and presumed that it was derived from the same jaw as the lower premolar tooth whose discovery was reported in 1926 by Dr Zdansky.

In 1903 Professor Schlosser had emphasized the fact that while the tooth he was describing on that occasion differed from those of other known human and simian remains, morphologically it was

## ANTIQUITY

essentially human in type, but revealed certain remarkable points of similarity to one of the fossil apes from the Siwalik Hills. The tooth found in 1927, like that of 1903, was partly embedded in a stony matrix which, in addition to the condition of mineralization of the tooth itself, corroborated the extreme age of the specimen.

In a monograph published in 1927 (*Palaeontologia Sinica*, series D, vol. 7) Dr Davidson Black gave a detailed description of the tooth found by Dr Bohlin in that year. He called attention to its distinctive characters, and contrasted it with a series of primitive human and simian teeth. He provides ample justification for his action in creating a new genus and species of the human family. He shows how every character of the tooth, the form and proportions of the crown, the peculiarities of the roots and the size and form of the pulp cavity all agree in conferring upon *Sinanthropus* a distinctive position intermediate between man and ape. Moreover he shows how generalized are the characters of the tooth, so that it enables us to understand how the peculiarities revealed in the later types of the human family have been derived from this extremely primitive type by differentiation of some of the potentialities so clearly manifest in this interesting tooth. He showed also with great clearness how the pattern of the crown showed a distinct likeness to that revealed in the fossil ape *Dryopithecus*.

In spite of the very thorough and complete demonstration of the fact that the tooth of *Sinanthropus* was of early Pleistocene age and so definitely different from that of all other known human teeth (an extremely generalized human type presenting obvious analogies to the conditions found in the fossil apes which most nearly conform to the human type) Dr Black's action in creating a new genus did not meet with any widespread support. A year later, however, the discovery made by Dr Birger Bohlin, working in conjunction with Dr C. C. Young and Mr W. C. Pei, of fragments of two jaws and braincases, provided evidence which confirmed the validity of the genus founded in 1927. The tooth upon which Dr Black based his definition of the new genus conformed in character to the two teeth whose discovery was announced in 1926, as well as to the tooth described by Schlosser in 1903, and there can be no doubt that these four teeth all belong to *Sinanthropus*. One of the teeth found by Dr Zdansky in 1926 probably came from the same jaw as the type-specimen found in 1927. The two jaws found in 1928 contained a number of teeth conforming to the same characteristic morphological type as that found in 1927. Both jaw fragments, one of a child and the other of an adult, display very

PLATE II

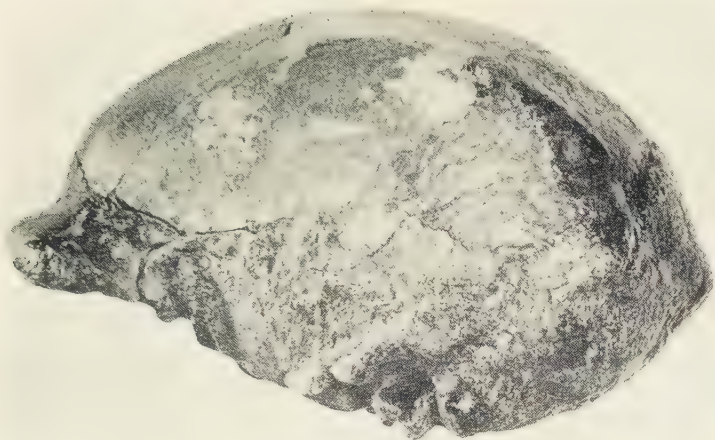


FIG. 3. The left side of the braincase found 2 December 1929

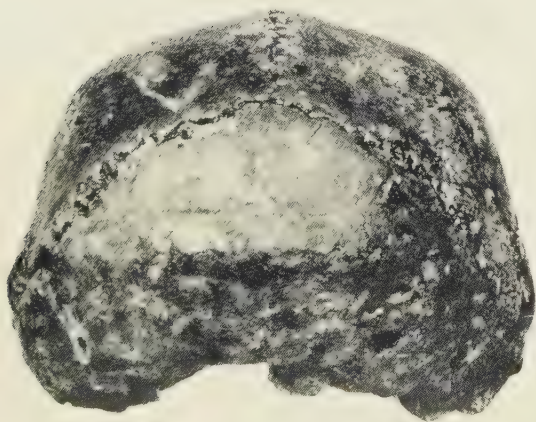


FIG. 4. Posterior aspect of the braincase



PLATE III



FIG. 5. The lower surface of the braincase

## PLATE IV



FIG. 6. The upper aspect of the skull with part of the roof removed to show the exceptional thickness of the skull and the appearance of the natural limestone cast of the brain cavity

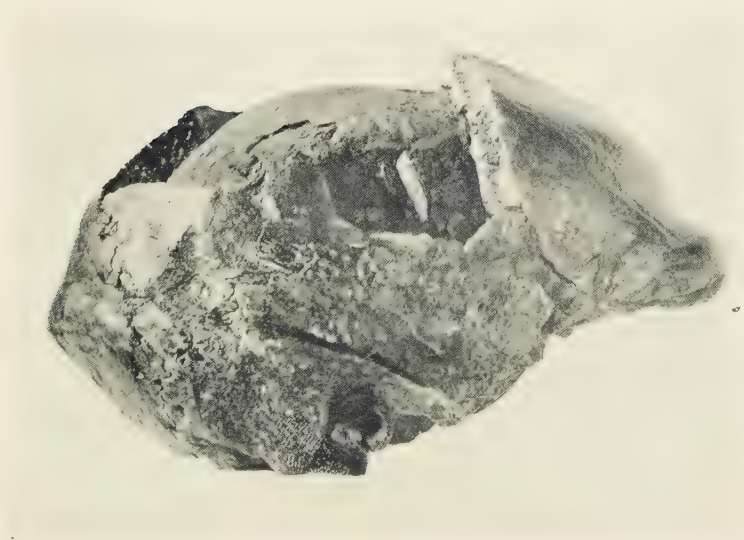


FIG. 7. The same specimen seen from the right side to display in an even more emphatic way the thickness of the skull and the diminutive size of the space for the brain. The tooth of a cave bear is imbedded in the limestone cast just behind the edge of the frontal bone

PLATE V



FIG. 8. A group of Chinese boys sitting the material from the cave in the vain search for flint implements



## DISCOVERY OF PRIMITIVE MAN IN CHINA

significant peculiarities in the chin region. The oblique slope of the anterior surface is comparable only to that of anthropoid apes and the Piltdown jaw ; and a peculiar conformation of the lingual aspect of the jaw is analogous to, though not exactly identical with, the peculiarities of the jaw found at Piltdown in 1912, which has been a subject of the liveliest controversy ever since.

While the finding of this peculiar ape-like type of jaw in association with fragments of braincases, which are unquestionably human, provides corroboration of the justice of regarding the tooth of 1927 as a new genus, it also affords evidence which cannot be ignored in support of the validity of regarding the jaw found at Piltdown as part of the same human individual whose broken skull was also found alongside it. The features of the jaws of *Sinanthropus* seem to suggest the possibility that the fossil man of China might be more nearly akin to the early Pleistocene man of Piltdown than to the Ape-man of Java. It would however, be more accurate to say that, as nothing whatever is known of the type of jaw of *Pithecanthropus*, the only human jaw susceptible of comparison with the Peking jaws was that found at Piltdown. The contrast between the teeth of *Pithecanthropus* and those of *Sinanthropus* suggest that there must have been a considerable contrast between the jaws of those two primitive genera. In 1929 however, the finding of an almost complete braincase of *Sinanthropus* by Mr W. C. Pei revealed a type of skull which, while it was still embedded in the hard matrix of travertine (involving the base and a greater part of the sides of the skull) seemed to be much more nearly akin to the skull of *Pithecanthropus* than to that of *Eoanthropus*. While there is this obtrusive general resemblance to *Pithecanthropus*, however, it is important not to minimize the peculiarly significant expansion of the frontal and parietal parts of the braincase which so definitely distinguishes it from the skull of *Pithecanthropus*. There can be no doubt, however, that just as the finding of the jaws in 1928 suggested the possibility of some kinship with the Piltdown man, the skull found in 1929 caused opinion to swing in the other direction and suggested a nearer kinship with *Pithecanthropus*. In 1930, however, when after four months of intensive work, Professor Davidson Black completely liberated the skull from the matrix of travertine, the braincase was revealed with a curious blend of characters hitherto regarded as distinctive, some of them of *Pithecanthropus* and others of *Eoanthropus*. The combination in the same specimen of peculiar characters hitherto regarded as incompatible one with the other was not only important as a revelation of the extremely

## ANTIQUITY

primitive and generalized qualities of *Sinanthropus*, but, what was even more important, it formed a link between the other two genera of early Pleistocene men, concerning the validity and significance of which there had been so much doubt and suspicion. Hence the skull found in 1929 not only established on a firm foundation our knowledge of primitive man to which it gave coherence and in which it inspired confidence, but in addition it revealed a type which was so primitive as to enable us to visualize the characters of the common ancestor of all three genera.

If the size and form of the eyebrow-ridges (fig. 3) and the median frontal crest (fig. 6) suggest a kinship with *Pithecanthropus*, the form of the posterior aspect of the skull (fig. 4) presents a marked contrast to the Java fossil and a definite likeness to *Eoanthropus*.

As long ago as 1903 Professor Schlosser defined the contrast between the tooth he was discussing and those of *Pithecanthropus*, differences which have been still further emphasized by Professor Davidson Black with the fuller material at his disposal.

The braincase of *Sinanthropus* differs from that of *Pithecanthropus* not only in the matter of the local expansions of the frontal and parietal areas, but also in its general form and the characters of its cranial bones. For the exceptional thickness of the cranium (figs. 6 and 7), and the peculiar architecture of the bones reproduce conditions which hitherto have been regarded as distinctive of *Eoanthropus*. The form of the surprisingly small cranial cavity presents a significant contrast to that of *Pithecanthropus*, being narrower and loftier, and free from the grosser type of distortion revealed in the broad flat endocranial cast of *Pithecanthropus*. The braincase of *Sinanthropus* reveals many features which are unknown either in the Ape-man of Java or in the Piltdown skull, and throws a great deal of light upon the characters of the common ancestor of the human family, from which all these genera had been derived. One of the most striking illustrations of this fact is the peculiar form of the mastoid region of the temporal bone, recalling as it does the condition found in the new born child and in the adult anthropoid apes. For it lacks that salient character which is so distinctive of the adult human being of other genera.

The skull found in 1929 is that of a young adult corresponding in the state of its development with the condition found in modern human skulls at about eighteen years of age. When the skull was first examined Professor Davidson Black was impressed by the grace of its contours in comparison with the uncouth outlines of *Pithecanthropus*,

## DISCOVERY OF PRIMITIVE MAN IN CHINA

and suggested the possibility that it might be female, with the reservation, of course, that the evidence at our disposal regarding this hitherto unknown type of being was altogether inadequate for any definite decision upon this matter. Its grace, however, may be due to its primitiveness and the fact that it is free from those secondary distortions which give the degenerate *Pithecanthropus* its bizarre character. The discovery of another braincase was made in July 1930 by recovering from material brought in from the Chou Kou Tien cave (in October 1929), a series of fragments which naturally articulated one with the other to form the greater part of the calvaria. This discovery of a skull of another young adult of approximately the same age as the one found in December 1929 revealed a more lightly built skull with small eyebrow ridges, a less prominent forehead and less obtrusive parietal eminences, which both Professor Davidson Black and I consider to be probably of different sex from the other skull. It seems not unlikely, however, that the skull reported in July 1930 may prove to be female and the other skull (found on 2 December 1929) male; but at present neither opinion can be said to be based upon any really decisive evidence. The discovery of a second skull enormously enhances the value of the information we have because it permits comparisons to be made.

In the material found in 1928 there are remains (fig. 5) of two other broken skulls (still embedded in travertine), which provide other important comparative material for studying the range of variation of the skulls.

Whether or not the Peking man was older than the fossils found in Java and Sussex, there was no doubt that he represented a more primitive type. His characters were more generalized, some of them distinctly reminiscent of man's simian ancestry and others strangely foreshadowing the qualities hitherto regarded as distinctive of *Homo sapiens*. In other words, *Sinanthropus* enables us to picture the qualities of the original members of the human family by revealing a type which, though human, was curiously ape-like, and obviously close to the main line of descent of modern man.

The work of investigation and of recording the results of the work has been carried on with exceptional thoroughness and imaginative insight. It was hoped by Dr Davidson Black that the prompt publication of bulletins and the wide circulation of manuscript reports even before they were published, would have prevented the development of such misunderstandings as had marred the discussions of the fossil



## ANTIQUITY

remains of man in the past. In spite of these precautions, eminent palaeontologists in Germany and France are already claiming that the Peking man belongs to the genus *Pithecanthropus* ; others in America have suggested that he is merely a Far Eastern example of Neanderthal Man ; and others again that the Chinese fossils were not human.

Having just made a careful examination of the actual fossils in Peking and compared them with human and simian skulls, and the casts of the other kinds of extinct members of the human family, I can confidently support the opinion of Dr Davidson Black that *Sinanthropus* is an undoubted member of the human family, who reveals in every part of his skull and teeth evidence to distinguish him from all other known human types, and to justify the separate generic rank suggested to define his status.

### *The Absence of Implements*

In studying the remains of early man it is always a matter of particular importance to search for the tools and implements which might bring the human beings into association with some definite phase of industry. It is a very significant phenomenon that at Chou Kou Tien, in spite of the most careful search in the caves during the last three years, no trace whatever of implements of any sort has been found. When it is considered how vast a quantity of fossil remains has been found and the scrupulous care which has been exercised in the search, it must be something more than a mere coincidence that no trace of any stone implements has been found. Not only have the various excavators been on the constant look out for such artefacts (in particular Father Teilhard has been looking for archaeological evidence), but after the material was removed from the caves, a group of boys was put on to sift the material once more to make quite certain that no such evidence has been overlooked by the geological explorers. It must not be forgotten, however, that Dr Andersson in 1921 found pieces of quartz in association with the fossil bones, and that in the later stages of the excavation Mr Pei found further examples of this alien material. Those who have been searching in vain for evidence of human craftsmanship on this site are being forced to the conclusion that the Peking Man was in such an early phase of development as not yet to have begun to shape implements of stone for the ordinary needs of his daily life.



PLATE I



FIG. 3

EARLY IRON AGE COINS (x about 4) SHOWING TYPES OF HORSES

FIG. 2



# The Uffington White Horse

by STUART PIGGOTT

THE White Horses cut in the turf of the Wessex Downs are familiar to most people who have wandered over the hills of western England, and many have no doubt paused to look at one or another of them and perhaps to 'hazard a wide solution' as to its antiquity or origin. But of the fifteen White Horses in Wiltshire and the adjoining counties, only one can be attributed to a date before the eighteenth century. This, the sire of them all, is cut on the north slope of the Berkshire Downs, above the village of Uffington, and gives its name to the fertile plain of mid-Berkshire—the Vale of the White Horse. Camden in writing of the Vale was wholly contemptuous of the Horse, saying that the inhabitants named the district 'I wotte not from what shape of a white horse, imagined to appeare in a whitish chalky hill'. But despite Camden's scepticism, the Uffington White Horse very definitely exists, and has been cited as a landmark since the eleventh century, when the cartulary of Abingdon abbey records that one Godfric was possessed of Sparsholt *juxta locum qui vulgo mons Albi Equi nuncupatur*. In the thirteenth and fourteenth centuries the Horse is several times mentioned in connexion with the tenure of lands near it. Mr T. H. Ravenhill has recently drawn attention to an early fourteenth century manuscript in the library of Corpus Christi College, Cambridge, entitled *Tractatus de mirabilibus Britanniae*, in which the White Horse is given second place among the Marvels, Stonehenge being first.<sup>1</sup>

Apart from these references, the Horse suffered neglect until 1738, when Dr Francis Wise wrote his *Letter to Dr Mead concerning some Antiquities in Berkshire*. In this he advanced the theory which for long held the field (although unsupported by any archaeological evidence), that the Horse was cut in the turf as a memorial of Alfred's great victory of Ashdown in 871. His pamphlet was answered in 1740 by 'Philaethes Rusticus' in an effusion with the delightful

---

<sup>1</sup> T. H. Ravenhill, *The Rollright Stones*. Little Rollright, 1926.

## ANTIQUITY

title of *The Impertinence and Imposture of Modern Antiquaries Display'd*. An anonymous reply to this in 1741 made no contribution to the subject, and, with the exception of a note by W. H. Thoms in *Archaeologia*, xxxi, the matter was left in quiescence until the publication in 1858 of Thomas Hughes' famous *Scouring of the White Horse*, in which the Saxon origin of the Horse was again set out. About 1890 Rev. W. C. Plenderleath published his most valuable little book on *The White Horses of the West of England*, from which much of the preceding information is derived. In this book he put forward arguments for an Early Iron Age date for the Horse. Finally, in 1926, Sir Flinders Petrie published for the first time an accurate plan of the Horse in *The Hill Figures of England*, for which all students must be immensely grateful.<sup>2</sup> Certain points in his description cannot however pass altogether unchallenged, and it is the purpose of this present paper critically to re-examine the details of the style of workmanship of the Horse, its associations and its parallels, with a view to determine its date, the culture to which it belonged and the reasons for its making.

The Horse is constructed by clearing down to the solid chalk over the whole area of body, legs and head, and not by digging a trench to show a white outline only. In this respect it differs from the other turf-figures of the Wilmington Long Man and the Cerne Abbas Giant, but compares with the Bledlow and Whiteleaf Crosses. As it is cut on the slope of the hill, the chalk has been exposed more as a terrace than as a wide ditch; there being a drop down into the area on the uphill side only. Some parts are banked up, notably the end of the tail and of one hind leg, while the eye is a levelled platform on the slope. The left-hand 'jaw' runs as a chalky trench on top of a raised causeway about a foot high at its lower end, to make the line more level. At several points, especially along the body and neck, there is clear evidence that the bare chalk areas have been originally wider, as shown by the hollows of the turf. The total length of the Horse is some 360 feet, its maximum height 130 feet.

It is obvious that a relatively short period of neglect would ensure the disappearance of the Horse beneath encroaching weeds and turf, as was almost the case with the Wilmington Long Man, and has probably been the case with many similar turf-figures now vanished. But the local inhabitants have until recent times 'scoured' the Horse and cleaned the bared chalk area at irregular intervals, the occasion

---

<sup>2</sup> The plan of the Horse (fig. 1) is based on that on plate vi of *The Hill Figures*.

# The White Horse of Uffington, Berks.

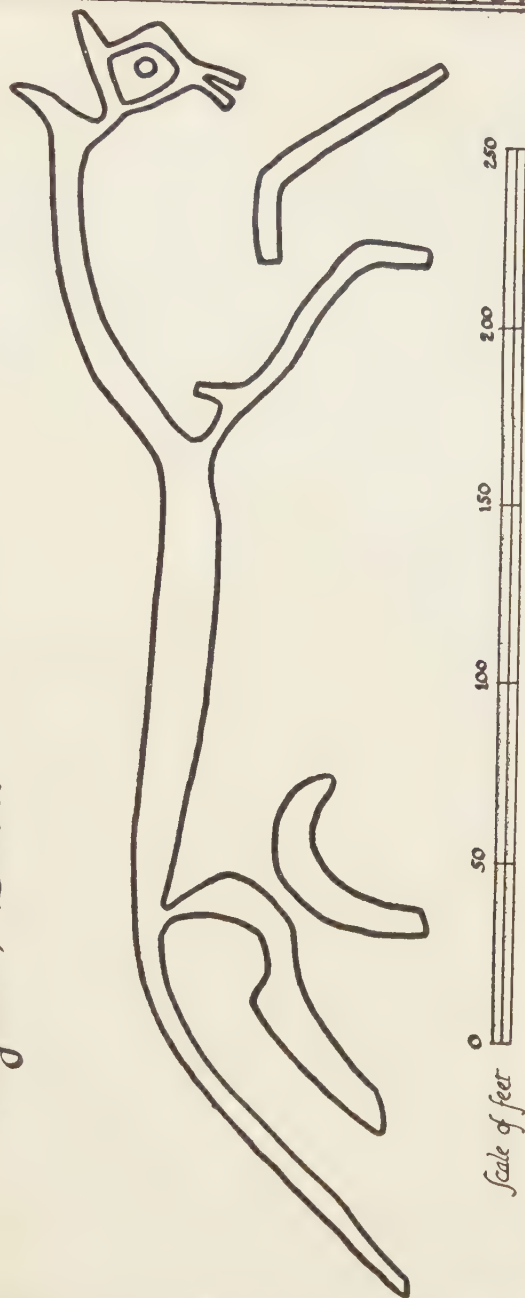


FIG. 1. PLAN OF THE BERKSHIRE WHITE HORSE,  
*after* Sir Flinders Petrie



## ANTIQUITY

being one of great festivities and a fair held on the hilltop—a festival which no doubt represents an ancient ritual in connexion with the Horse. There are records of scourings from 1755 onwards, until the last in 1857 so vividly described by Thomas Hughes. Now, with the decline of local interest, it has been left for the Office of Works to take charge of the Horse under the Ancient Monuments Act; festivities will be left to the Inspector of Monuments and weed-killer replaces Wombwell's Menagerie on the hill.

The Horse is on a steeply sloping hillside at a height of 500 feet, the slope facing westnorthwest. To the south, on the top of the hill, is the hill-fort known as Uffington Castle, consisting of an irregular oval area defended by a strong bank and ditch, with a slight counterscarp bank. The western side is flattened and contains the single incurved entrance.

Between the Horse and the Castle, on the slope of the hill, is an oval mound, 77 by 40 feet, with its long axis northeast-southwest. It is from two feet six inches to three feet high, and has a central crater from excavation. A ditch remains on the south and west. This 'pillow-mound' would appear to be that opened by Martin Atkins in 1857, and which was found to contain forty-six Roman burials.<sup>3</sup>

Below the Horse, on the sides of the 'declivity called by the country folk the Manger', but nowhere on the steepest slope, are slight lynchet banks implying cultivation of the slopes for no very long period, since on a slope such as this a lynchet accumulates rapidly. One bank shown on Sir Flinders Petrie's plan of the earthworks around the Horse just below the 600-foot level may be an accidental or natural terracing. It is very slight and not quite similar to the other banks.

On a projecting spur to the north is a natural hillock known as Dragon's Hill, which has been trimmed and flattened on top. Some soil has also been added to the south side. Martin Atkins found Roman coins and pottery on or about it, but it is clearly almost entirely natural, and may have been adapted as a medieval castle mound.

The Uffington Horse differs from all the other White Horses in its extraordinary and striking conventionalized style, so unlike modern conceptions of the animal. When considering the date of any artifact, although many criteria may be employed, the two most important are associations and style of workmanship. The former can only

---

<sup>3</sup> *Wessex from the Air*, p. 19.

## THE UFFINGTON WHITE HORSE

be used in exceptional conditions—for instance, in an undisturbed grave-group a pot of novel form may be dated by an axe of known type, or a ditch cutting through a barrow would be later than the barrow. The White Horse has however no such inter-relation with objects of known date, and while the proximity of sites of a certain period may be suggestive when backed by other evidence, they cannot be used as arguments for date by themselves. We are left then with stylistic grounds alone for suggesting a date for the Horse. It is a piece of work designed in a distinctive and conventionalized form, and we know it was in existence in early medieval times—beyond this there is no direct evidence.

The main features of the Horse are its attenuated and disjointed shape and in fact its general lack of resemblance to the animal after which it is named. Its peculiar shape has led certain speculative writers to suggest that it is no horse, but a dragon (or even an ichthyosaurus!), the adjacent Dragon's Hill being called in as witness. Dragon's Hill, as we shall see later, may owe its name to another legend, but meanwhile these writers have not considered one strong proof of the animal's equine ancestry, in that an animal so unlike ordinary representations of a horse should have been called the White Horse since the eleventh century. Had there been no firmly rooted tradition that this strange figure represented a horse, it is quite probable that it might have been named by the local people after anything it suggested to their imagination. And when, seeking for parallels, we find undoubted horses represented in an analogous style at a certain period of prehistoric art in England, we can at once dismiss the dragon theory.

As well as the disjointed and elongated form of its limbs and body, the head of the Horse is of peculiar shape. The ears are large, and the v formed between them cuts deeply into the back of the head. The eye is represented by a round patch of chalk about five feet across, while the greater part of the face is untouched turf bordered by a chalk trench, giving an 'outline' effect unlike the 'solid' treatment of the rest of the body. But the most striking feature of the head is the jaws, which project downwards as two narrow divergent cuttings, not unlike the beak of a bird.

A horse with just such attenuated body, disjointed limbs and peculiar head is represented on a large and well-known series of gold and silver coins minted in England towards the end of the Early Iron Age (La Tène III) in imitation of a gold stater of Philip of Macedon

## ANTIQUITY

(died 336 B.C.); the type passing from Gaul to Britain about 100 B.C.\* On the reverse of the original coin is a chariot drawn by two horses, urged on by a charioteer, with the name Φίλιππος in the exergue. By a process of continual copying from copies the chariot degenerates on the British examples to a wheel (which in itself was probably a sacred symbol among the Gauls), the charioteer to a group of pellets and the horse (in the latest stages) to a jumble of dumb-bells and crescents. In the intermediate examples we have an animal in all essentials like the White Horse, although the body (probably to suit the exigencies of a circular design) is more curved. But to say that the horse on the coins 'is always a short, tubby beast', as Sir Flinders Petrie has stated, is incorrect, and in any case the resemblance between it and the Uffington figure is still further borne out by the characteristic details of the treatment of the head described above. On a coin showing a very degenerate beast (fig. 2) the narrow beak-like jaws are clearly shown, joined by a cross-bar (? a bit) and the treatment of the body, with its detached limbs, is quite comparable with the Uffington Horse. Another coin, (fig. 3), more naturalistic as to the body, shows the head treated in outline with a large space around the eye, and is nearer in type to the Aylesford horses.

The coins are not our sole evidence however for Early Iron Age representations of the horse. On the two famous bronze-mounted buckets from Marlborough and Aylesford (figs. 4, 6, 7) the horse is again represented as a decorative motif, and although the resemblance between these animals and the White Horse is not so striking as that between it and those on the coins, they are all nevertheless recognizable as products of the same artistic tradition.

Art in England at the close of the Early Iron Age was essentially decorative and non-representational. In its sense of the balance of abstract designs and its triumphant use of curves of faultless certainty and matchless beauty it is probably unequalled. Whether the decoration is on a wooden tub or a cooking pot from Glastonbury, or on such a *tour de force* of metal work as the Battersea shield or the Birdlip mirror, the even flow of the curved elements of the design and their combination into a harmonious whole show an exquisite feeling for pattern, and a complete accord between the decoration and the object decorated. The artist of the period saw in the horse a symbol to be incorporated in a design, and took what liberties he thought fit to make it in accordance

---

\* First pointed out by Sir John Evans, *Coins of Ancient Britons*, 1864, p. 21 ff.



PLATE II



FIG. 4. THE MARLBOROUGH BUCKET, DEVIZES MUSEUM  
*By permission of the Wills Archaeological Society*

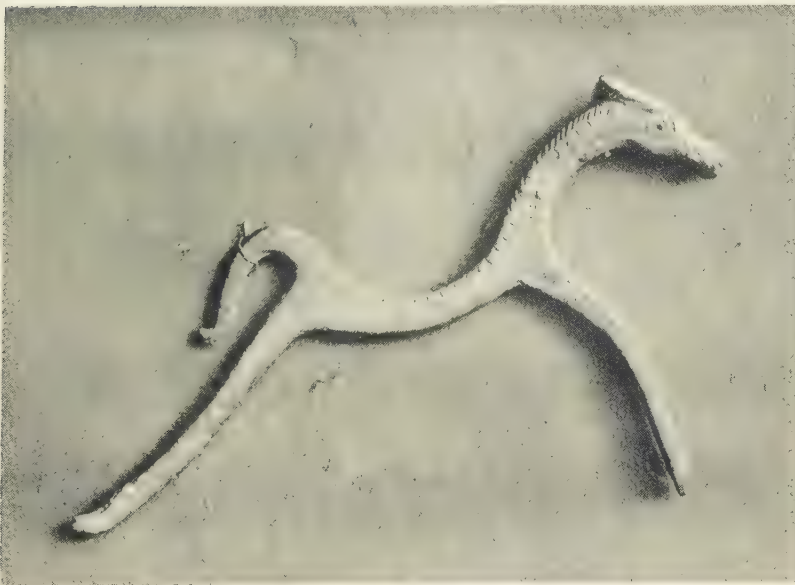


FIG. 5. ROMANO-BRITISH BRONZE HORSE FROM SILCHESTER, READING MUSEUM

PLATE III



FIG. 6. HORSES ON THE MARLBOROUGH BUCKET  
*By permission of the Wills Archaeological Society*



FIG. 7. HORSES ON THE AYLESFORD BUCKET, BRITISH MUSEUM

## THE UFFINGTON WHITE HORSE

with his decorative curves. Consequently the opposed beasts on the Aylesford bucket have bodies based upon the s-shaped thick-ended scroll which forms the basis of design in another panel on the same vessel, while their tails are bifid and doubly curved. The heads have the jaws curved outwards and thickened, and the ears are thickened s-curves, but the large eye remains and in its essentials it is the same head as that at Uffington and on the coins.

The horses on the Marlborough bucket (which are directly comparable in style to some from La Tène itself) are also conventionalized, although their jaws have been converted into a single spiral appendage not unlike a grotesque trunk. The bodies are elongated and s-shaped, and the mane is a prominent feature.

This conventionalization of animal forms can be paralleled in medieval heraldry. The heraldic lion is a monster unlike anything that ever lived, and indeed with his elongated body and stylized legs he is by no means unlike the White Horse. But he fills a space admirably; he can be arranged to fit a pattern and is a satisfying piece of decoration. So with the Early Iron Age horses. In both cases design was the all important factor in the artist's mind. Landseer might paint more leonine lions than a medieval herald, or Morland more equine horses than the Aylesford beasts, but perhaps they could neither of them have made so good a pattern.

It has often been remarked that the native British tradition in art survived in certain products of the Roman occupation of this island, notably in the Castor ware and in some enamelled brooches. The hunting scenes on the pots of Castor ware are quite in the tradition of the coins, and when we look at the well-known cup from Colchester with a chariot race upon it, we see the coin conventions repeated again—a wheel to represent the chariot, and the horses, although not so disjointed as on some coins, yet still executed in the British manner.

A small bronze figure of a horse from Silchester (fig. 5) must certainly be the work of a British craftsman who might almost have had the White Horse in mind, so alike are they in general conception. The Silchester figure is more naturalistic as to the head, but the eye is shown by a primitive 'ring and dot', and the treatment of the body and legs is completely non-Roman in feeling. Although improved by breeding in a more sophisticated stud, it still shows clear traces of the old stock.

On stylistic grounds then we may date the White Horse as not earlier than La Tène III. It is unlikely that a work on such a scale



## ANTIQUITY

would be constructed during the Roman occupation, so we may suggest a date within the first century B.C.

One feels that there ought to be some relationship between the Horse and the hill-fort above it, and Mr Crawford has suggested that it was the tribal emblem of the inhabitants of the camp.<sup>4</sup> Mr C. F. C. Hawkes tells me that there is evidence to show that Uffington Castle was constructed in Hallstatt-La Tène I times, but surface finds near include two small enamels of typical late La Tène style.

A feature of the construction of Uffington Castle, namely the existence of a facing of sarsens to its chalk ramparts, suggests comparison with Alfred's Castle near by, a small earthwork with similarly constructed ramparts. Surface finds of pottery from the latter site suggest a Hallstatt-La Tène I earthwork occupied again in La Tène III, and Uffington Castle may have had a similar history.

A horse as a motif of decoration on a coin is understandable, but one naturally asks why any people should cut out a horse more than a hundred yards long on the side of a conspicuous hill. While freely admitting that there may be a tendency to ascribe anything unusual to religious purposes, (especially when little is known of the religion in question), it seems hard to suggest any other origin for the Uffington Horse. Mr Crawford has suggested that it was a totem, and such a conspicuous figure must have been a cult-object for a large area. What we do know of Gaulish and Celtic deities indicates the existence of a considerable element of animal worship, and in England especially of the cult of the boar—the horned man Cernunnos, the swine-god Moccus and the bull-god Tarvos Trigaranus are further examples. The goddess Epona appears to have been a minor deity represented as riding on a horse, and it has been suggested that the original Epona was a divine mare, the woman being a later sophistication.<sup>5</sup> While not going so far as to identify the Uffington Horse with Epona her existence as a deity is a pointer in the right direction.

Local legends and folklore often convey a useful hint to the archaeologist, and although the Horse itself appears to have no legends about it (other than those of its association with Alfred, doubtless dating from the eighteenth century), local tradition asserts that Dragon's Hill is so called because St. George killed the Dragon on its summit,

---

<sup>4</sup> ANTIQUITY, 1929, III, 281.

<sup>5</sup> Rice Holmes, *Ancient Britain*, p. 284 n.5, quoting de Jubainville.

## THE UFFINGTON WHITE HORSE

and further that no grass will grow where the blood was spilt. This association of a spot so near the Horse with St. George is of peculiar interest and importance. There is evidence that that popular saint replaced, on the introduction of Christianity, a deity or demigod who was either closely associated with horses or actually a horse-god. This substitution of a Christian saint for a pagan god is of course by no means uncommon, and as the early missionaries to England had definite instructions to reconsecrate the pagan shrines to Christianity,<sup>6</sup> it is only to be expected that many a local deity would be replaced by an appropriate and convenient saint, or indeed might become a saint himself. The innumerable holy wells in the West of England and in Wales point to converted water-gods who exchanged their ancient and dubious habits for a halo and a ready-made and edifying history. At one of these wells, the well of St. George at Llan San Sior, near Abergele, North Wales, horses were sacrificed until quite recent times. The custom was for the rich of the district to offer one horse, and then all diseased horses were brought to the well and sprinkled with the water, while an appropriate blessing was pronounced.<sup>7</sup> The fine springs just below the Manger and Dragon's Hill may have been similarly associated with the name of St. George.

The legend of Dragon's Hill may thus preserve a valuable link between the White Horse and this shadowy deity which the popular St. George legends suggest.

In English folklore there are abundant traces of rites centring round animal gods : for example, the ritual sacrifice of a man disguised as a ram was enacted in a crude drama in Derbyshire until a few years ago,<sup>8</sup> while the man masquerading as a horned beast has a distinguished history which may begin with the palaeolithic sorcerer and end with such odds and ends of customs as the horned mask of Christmas mummers in Dorset. The ancient horse-god may now caper about as the Cornish and Somerset hobby-horse of the May-day festivities and the Hooden Horse of Thanet, or be degraded to the Christmastide buffoonery of the South Wales Mari Lwyd.<sup>9</sup> In Derbyshire 'The

---

<sup>6</sup> See for instance the letter from Pope Gregory to the Abbot Mellitus, A.D. 601, quoted by Bede. (Bohn's edition, pp. 55-6).

<sup>7</sup> T. Gwyn Jones, *Welsh Folklore and Folk Custom*, (Methuen, 1930), p. 112, quoting Pennant's *Tours* (late 18th c.)

<sup>8</sup> *Derbyshire Arch. and Nat. Hist. Soc.* XXIX, 31-42.

<sup>9</sup> See *Guide to Welsh Bygones*. Nat. Mus. Wales, pp. 62-4.

## ANTIQUITY

Old Horse ' was the chief actor in a drama in which he was rejuvenated, while in Yorkshire a similarly disguised person went round at Christmas singing a song.

Whether the St. George who is killed and resurrected in the well-known Christmas mummers' plays should be connected with the horse-god can only at present be suggested with all reserve, but the Mari Lwyd (the South Wales equivalent of the Mummers) and the Derbyshire play are suspicious if nothing more.

These survivals, slight as they are, may serve to show that a horse-deity has left traces in existing folklore, and it is most probable that the seasonal 'scouring' with its attendant festivities on the hill must represent an ancient ceremony, as the maypole dancing above the Cerne Abbas Giant. I have elsewhere<sup>10</sup> suggested links between this figure and certain medieval legends and modern folklore elements.

But any connexions of the Horse with ancient cults or modern folklore must at the best be tentative guesses, and from study of the available facts we can only safely draw one conclusion ; that the Horse is a monument constructed at the end of the Early Iron Age, probably in the first century B.C. Beyond this we can be sure of nothing, and in many respects the White Horse still remains a mystery.

---

<sup>10</sup> *Folk-Lore*, XL, 193-95.



## Skara Brae: a 'Stone Age' Village in Orkney

by V. GORDON CHILDE

PERHAPS the greatest handicap in trying to visualize life in prehistoric Britain is the exiguity of domestic remains, especially on the architectural side. The dwellings themselves were normally of perishable materials so that only their outlines survive, and of their furniture not even that can be said. An exceptional conjunction of circumstances has, however, preserved in Orkney a whole village belonging to a belated Stone Age, with its huts and their fixtures reasonably complete. The huts were built of stone; they had been packed in refuse and were eventually buried by sand, and so the walls still stand to a height of from 8 to 9 feet. The timber shortage prevailing on the wind-swept isle necessitated the translation into stone, and therewith the immortalization of articles such as beds, usually manufactured of ephemeral wood. The village is indeed a highly specialized adaptation to a particular environment so that deductions from it can only be generalized with reservations. Again, though the villagers used only stone and bone tools, they probably lived at a time when bronze, and perhaps even iron, were current in less isolated localities. Still we get here so vivid a picture of Stone Age life in our islands that a summary of the results of four seasons' work may be of interest even to the general reader.

The village in question is situated on—or to speak more accurately constitutes—Skara Brae, a low hillock rising some 37 feet above O.D. at the south corner of the Bay of Skail, on the exposed west coast of Orkney Mainland. The villagers lived by rearing sheep and cattle on the well-grassed sandy flats behind the bay, collecting limpets and other shell-fish, catching wild-fowl, and hunting the red deer which, with the wild boar, must still have survived in sheltered groves further inland. So much can be said from the bones, shells and antlers found on the site. On the other hand no grains, and only one object at all reminiscent of a quern, have been discovered, so that it is unlikely that agriculture was practised. Pots were manufactured and flint and stone worked at the site but there are no indications of

## ANTIQUITY

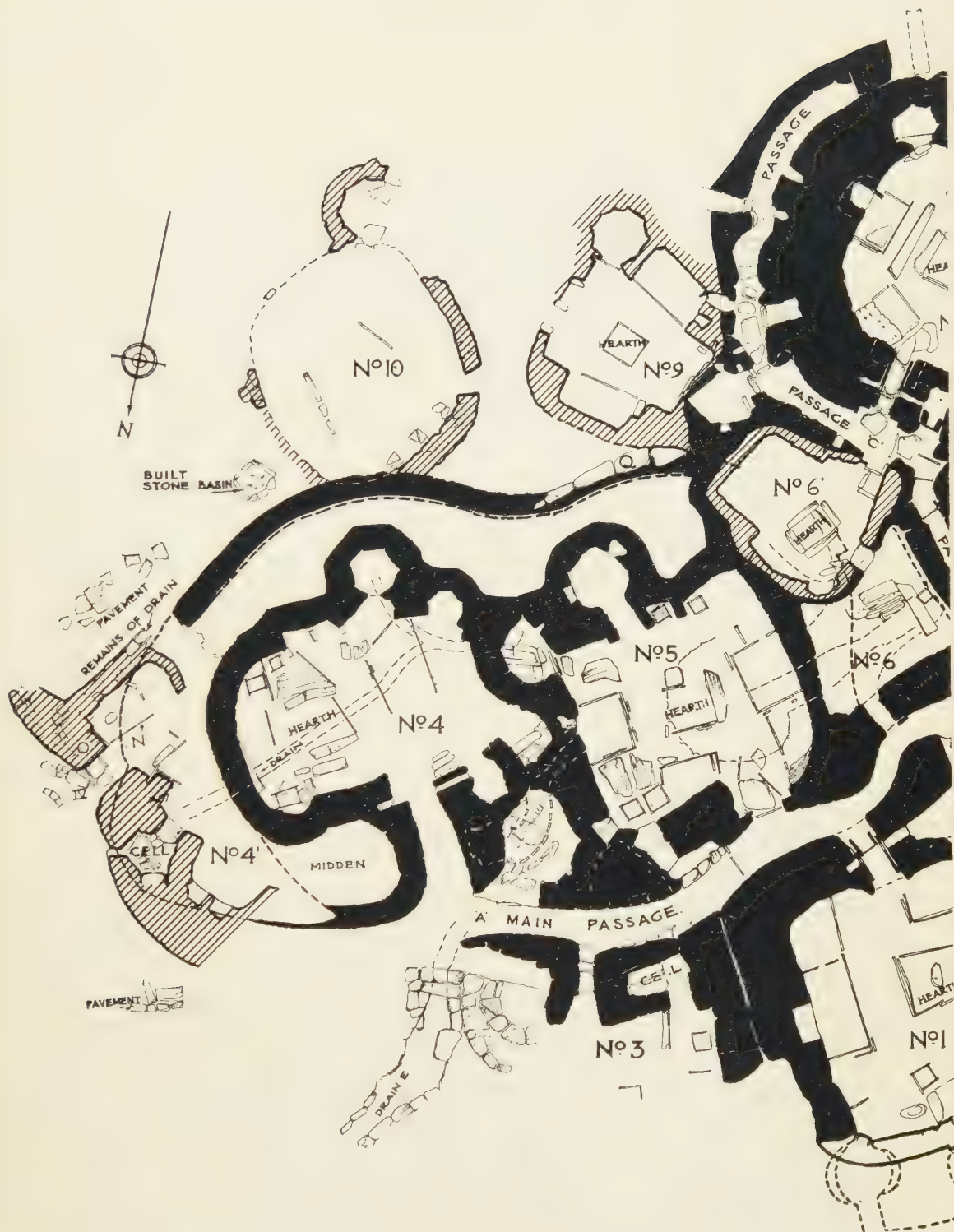
weaving. Clothing must have been made from skins, for the dressing and piercing of which many of the bone implements from the village are well adapted. But, as stated already, the importance of Skara Brae is primarily its revelation of primitive 'town-planning' and domestic architecture.

In its final form the village consisted of two quarters—a residential complex and a sort of industrial annex to the west. The former is an agglomeration of stone huts connected by covered passages and all partially buried in a huge midden heap. The northern and eastern sides of this complex have been denuded to an incalculable extent by marine erosion so that the whole is no longer complete. What survives is a series of five (originally six) huts grouped on either side of the winding passage (A on the plan) that runs roughly east and west, with a seventh hut to the south at a distinctly lower level and connected with the rest by a branch passage (B).

The materials for building the huts and passages lay near at hand. The shore is littered with flat slabs of Caithness flagstone, quarried out by the waves and dressed by the same natural agency to a smooth straight edge on at least one side. If laid double in horizontal courses, as in a modern dyke, such slabs give a wall with two splendid faces.

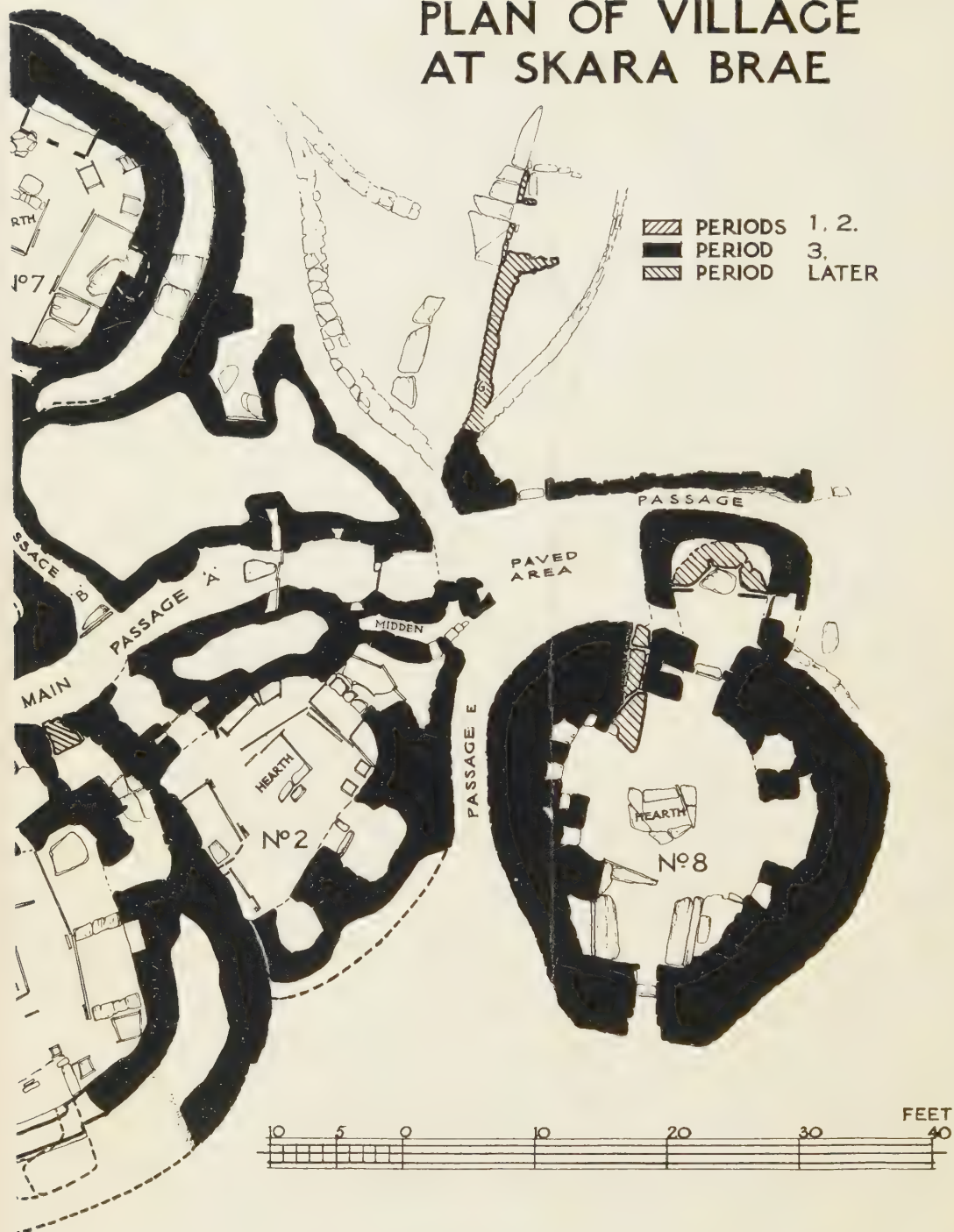
The huts themselves approximate in plan to rectangles with rounded corners, varying in size from 21 feet by 20 to 16 feet by 14, and are surrounded with double walls. Generally each hut was protected in addition by a 'casing wall', only one course thick and faced on the outside alone, the space between the casing wall and the hut wall proper being filled with a core of rubble or refuse. A few feet from the floor the successive courses of the inner wall begin to oversail one another, particularly in the corners, as if the whole hut were to be roofed by a corbelled vault. But in the best preserved hut (no. 7, plate 1) the overhang at the wall centre is just over 2 feet at 9 feet 6 inches from the floor and only 2 feet 4 inches in the corner at the same height. At this rate the hut, which is 17 feet wide, would have been an incredibly lofty structure before the walls converged, either completely or so as to leave only a narrow smokehole. A tent-like erection of skins, supported by whale-bone rafters, is a possible alternative; the holes high up in the wall of hut 7 do look suspiciously like beam sockets.

The sole entrance to the hut was a doorway some 3 feet high and less than 2 feet wide running tunnel-like through the thick walls. A stone bar (actually found in place in hut 4) sliding in a channel in the





# PLAN OF VILLAGE AT SKARA BRAE



By permission of H.M. Office of Works

facing p. 48

## SKARA BRAE

wall secured the door, which was presumably a stone slab. The same doorway was probably the sole source of ventilation. Only in hut 5 is there any trace of a window, and it is uncertain whether this opened onto more than a covered passage.

To each hut one or more beehive cells, built in the thickness of the walls, were attached. In huts 1, 4 and 5 at least one such cell was served by a regular built drain running under the hut floor and roofed with slabs. The cells in question may therefore be plausibly regarded as privies, however surprising such modernity in sanitation may seem in a village so squalid in other respects. At the same time, some cells were used as treasure-houses : a hoard of some 3000 beads and pendants was found in the deepest cell off hut 1 and a smaller group of fine trinkets in the cell of 7 ; a cell attached to hut 4 contained a finely carved stone ball and similar valuable objects.

The furniture of all huts is very similar and marvellously preserved. In the centre of the floor is a square hearth enclosed by four kerb-stones and filled with red peat-ash. Immediately behind are traces of an upright stone or pillar. Against the walls on either side of the fire-place stand the beds, enclosures formed by big slabs on edge kept in place by stone wedges driven into the floor. At the head and foot stand pillar-like slabs (now mostly broken) recalling bed-posts, and perhaps really designed to support a canopy of skins. A third enclosure, of similar plan but smaller and fenced by lower slabs, stands against the front wall to the left of the door. This may have been the children's bed.

These sleeping-places, measuring from 7 feet by 3 feet 6 inches to 5 feet by 3 feet, are all relatively wide and short just like peasants' bedsteads in Scandinavia today. That does not of course imply that their occupants were of low stature ; Norwegians and Swedes are notoriously tall. The floors of the beds were generally in a filthy state, littered with gnawed bones and even excrement, but beads and other valuables have also been found on them. Of course the floor must have been covered with a couch of ferns or heather which masked the refuse and served as a hiding place for treasures, as mattresses do today. Members of the family used to sit by day on the edge of the bed's front partition-slab, which is often noticeably worn save at the ends where the ' bed-posts ' protected it, and articles they were making or using are frequently to be met on the floor between this improvised seat and the fire. Recessed into the wall above each bed are one or two cupboards or ambries to serve as keeping places for personal

## ANTIQUITY

possessions. Similar recesses above the sleeping places were thus used by dairymaids occupying beehive shielings in the Hebrides last century.<sup>1</sup>

The right-hand bed is always the larger. The fore corner adjacent to it is also enclosed and paved with a slate slab raised some six feet above the chamber floor. In the case of hut 7 a stone mortar, a basin of whale-bone, and cooking pots that had contained animal bones stood upon the raised floor. This corner may therefore be regarded as the kitchen of the chief family. A mortar and pot were found in the opposite corner of the same hut, perhaps implying the conduct of culinary operations there too.

Built out from, or recessed into, the rear wall of every hut stands an odd structure resembling a dresser and consisting of two tiers of shelves. Each shelf is formed by one or two large flagstone slabs resting on three pillars. Finally, let into the hut-floor in one corner, are three or four rectangular cists, walled with four slate slabs the joins between which have been carefully luted with clay as if to make receptacles watertight. The cists rarely contain anything but sand, and it has been suggested that they served as tanks in which limpets were kept fresh. However, from the cists in hut 3 a carved stone ball, a stone cup and perforated oyster shells were collected as if the receptacles were really storage boxes.

A peculiar feature, observed so far only in hut 7, deserves a brief digression. Under the side wall of the hut in the right hand bed-enclosure a cist grave had been laid containing the skeletons of two aged women, buried in the contracted position. It looks as if the old dames had been laid to rest here, possibly even sacrificed for the occasion, in order that their ghosts might help to sustain the walls in accordance with a very wide-spread, very ancient and very persistent superstition. In any case the bones show that the villagers were suffering from rheumatic affections such as might be expected from their mode of life. Prof. T. H. Bryce has been able to calculate the stature of one old woman as just under 5 feet 5 inches, confirming the inference from modern Scandinavian comparisons that low doors and short beds do not imply a race of dwarfs.

That the huts were living rooms and not mere bed-chambers is clear from the condition of the floors. These were littered not only with toilet-articles—beads and paint-pots—but also with tools,

---

<sup>1</sup> *Proc. Soc. Ant. Scot.*, xxxviii, 175.



## SKARA BRAE

broken pots and above all food-refuse. Indeed the villagers tolerated a nauseating amount of filth on the hut floors, but none the less they did not allow it to accumulate to a deep deposit. Periodical sweepings must have gone to swell the great midden heap that surrounded the huts. But that received contributions from other sources.

Naturally the villagers would not live continually in the dark dank huts, but on the rare fine days would go out and carry on their avocations in the fresh air. But the nearest open space was the surface of the midden heap which, as stated, covered the huts partially and the connecting passages completely. In its final shape the midden must have been an oval mound with its crest over passage A near huts 1 and 2, some 35 feet above O.D. From this region it sloped away to the south and east so that its surface lies about 30 feet O.D., south of hut 7, and only 28 feet O.D. east of 4. On the west the slope is interrupted by the wall flanking passage F, which here forms a sort of boundary to the residential complex. Storms have washed away too much of the seaward side of the mound for us to form an accurate picture of its appearance on the north. Over the whole area just defined, *save over the sites of huts*, we find on the top a stratum, 10 to 18 inches deep, rich in implements and potsherds as well as animal bones and shells. The implements are the same in character as those found on the hut floors, but generally less finely worked—the sort of things, in fact, which you might easily leave behind if interrupted in your work by a sudden storm. The pots are often accompanied by their slate lids as if they had been used on the spot, and patches of ash may often be observed near by. Altogether the relics prove that the villagers fleshed carcases, prepared skins and cooked upon the midden surface between their huts and above the passages. In other words, part of the midden deposit was due to occupation while the huts it surrounds and the passages it covers were in use.

Thus the absence of this occupational deposit over the sites of huts assumes a new significance. It means that there was no space available for occupation, presumably because the hut walls then rose above the midden level at these spots. That this was in fact the case is quite clear from hut 7, whose casing wall even today rises more than three feet above the top of the midden banked against it on the south. We must then imagine the great rubbish heap as studded with domical or conical projections where the huts emerged from its surface, and its even contours as interrupted by domes or cones of stones or skins.

## ANTIQUITY

Onto this midden surface the covered passages ultimately led. Passage A was very likely roofless east of the entrance to hut 5 and eventually came out onto an open paved area on the southeast at the foot of the retaining wall of hut 4. Passage C winds upward round the east side of 7 to an open gallery ending in a *cul-de-sac* on the south, but giving access by a gap in the east wall to a series of stepping-stones laid on the midden surface where trampling would be likely to produce slush. The west end of passage A is more interesting. It is barred by an elaborate gateway through which one passes, not onto an open midden surface but onto a paved area, conventionally termed the market-place, roofless but sheltered by walls on all sides.

North and west of the market-place rise the walls of hut 8 with its horseshoe porch. This hut differs even externally from the rest in that it stands from its foundations quite free of midden or other buildings. Its massive outer wall has at its base a course of great slabs on edge with the intervening angles cleverly packed with smaller stones. Inside, though it boasts keeping-places, a beehive cell and a square hearth, it lacks beds, limpet-boxes and dresser. The remains on the floor—hundreds of flint and chert chips and implements, blunted jawbones that might serve as fabricators (fig. 1, B3), piles of clay and stones cracked by heat—suggest the workshop of a flint-knapper and potter rather than a dwelling. The south side of the market-place is screened by a high wall, only one course thick, which runs westward for 26 feet and then stops abruptly without showing the least inclination to turn back upon itself. Behind this wall was nothing but sand. Yet it rested on a carefully laid bedding of blue clay which also underlies the market-place and extends a long way south and west thereof.

On the north of the market-place a pavement runs through the gap between the casing wall of hut 2 and hut 8 and seems to continue, unfenced, round the latter. Westward the market-place pavement is continued round the porch of hut 8 between the latter and the southern screen wall. But this pavement ceases with the wall though the blue clay bedding runs on westward down hill for an uncertain distance. Finally on the south a paved way F leads from the market-place to a cell F1, and thence on to the midden surface south of hut 7.

The area between passage F and the market-place is traversed by various walls, not all contemporary, but all only one course thick, all faced only on the side directed towards hut 7 and all radiating from the southeast corner of the market-place. The function of these divergent lines of wall is quite unknown. They can hardly have

## SKARA BRAE

been defensive since they faced the settlement. Were they corrals? or screens to retain sand-dunes blowing up from the southwest? Only one thing is clear: the region outside the western gate in passage A was occupied by structures essentially different in character from the dwellings of the central complex.

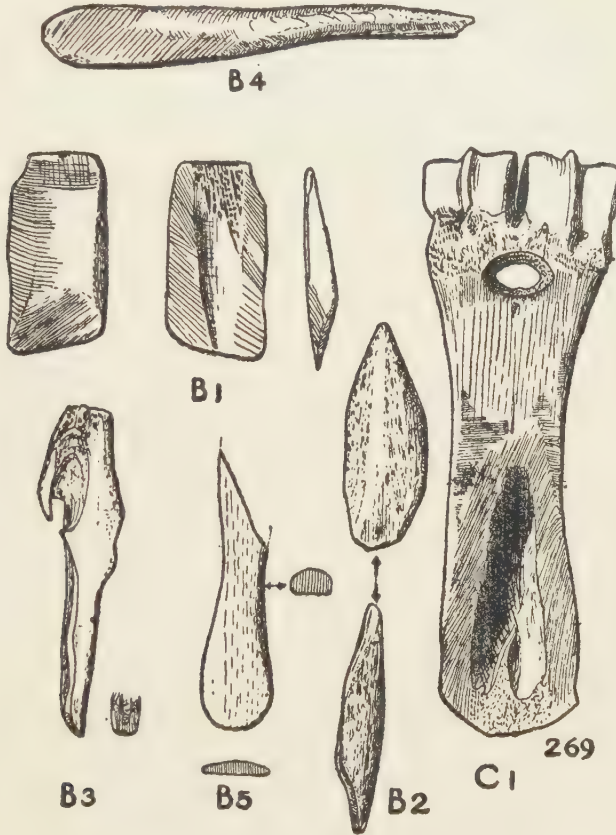


FIG. 1. Heavy bone tools §  
By permission of the Society of Antiquaries of Scotland

One interesting conclusion to be drawn from the foregoing study of Skara Brae may be called the 'antiquity of modernity'. As far as internal arrangements are concerned, many of the features of these Orkney huts must have been foreshadowed at least in the Bronze Age hut-circles of Mainland Britain, where conditions for their survival are missing. On the other hand they no less patently foreshadow



## ANTIQUITY

architectural details which survived in northwestern Scotland and elsewhere till recent times. A Norwegian peasant hut from Saetesdal now in the Folk Museum near Oslo, though built of timber, is quite surprisingly like the typical dwelling at Skara Brae. Being of wood the Norwegian house is of course rectangular, but it has the low narrow door, the square central hearth, and the fixed beds, short and broad on either side, just as in Orkney.

But if Skara Brae thus enriches our knowledge of an ancient and general type of north European dwelling, it is in other respects, as already indicated, a highly specialized adaptation to peculiar local conditions, and so we might reasonably look on the spot for earlier phases in the process of specialization. The midden deposit at its highest point is 15 feet thick ; six or seven feet of refuse or ruins of older walls can be found under the floors of the huts just described. In fact, as a result of the latest operations, it has been possible to distinguish three well marked structural periods anterior to the phase so far described. In their remains we might hope to discover more generalized forms and also hints of the factors determining the direction of subsequent modification. Let us accordingly review the history of the village.

The site was originally a comparatively level stretch of decomposed shale sloping up gently from 17.50 feet above O.D. along its northern edge to 22 feet behind hut 7, 70 feet to the south. Before man settled on the spot the clayey surface was partly covered with blown sand, 2 feet deep along the low northern edge of the area but gradually thinning out and eventually disappearing altogether southward. The sand accordingly tended to counterbalance the slope of the original land surface, leaving the original settlers a convenient level space on which to build their huts. Of these however little can be seen without disturbing the more precious later structures. A hearth of exactly the form already described was found on virgin clay in one test pit ; other pits disclosed only layers of midden resting on sand or clay, but containing sherds and bone implements identical in type with those from the latest huts and the topmost stratum of occupational midden. After midden refuse had accumulated to a depth of from 2 to 3 feet, the village was remodelled. New huts were built upon the old midden, which was often covered with a bedding of blue clay to give security to the new foundations. The ruins of four huts belonging to this second village have been partly explored and left open to inspection. Nearly all the features of the later huts are already foreshadowed in

## SKARA BRAE

period II. We see the same beehive cells, the same narrow doorways with channels for the bar, the same square fireplace in the hut's centre, the same sleeping places on either side, partitioned off by big slabs on edge and with keeping-places in the wall above them, and the same 'dressers' recessed into the rear wall. Only limpet-boxes are missing. Built sewers or conduits, roofed with heavy lintels and sloping seaward, are also attributed to period II. But it is still uncertain to what extent the huts were buried in refuse or connected by covered passages. Two hut walls at least were of the type, illustrated by hut 8, designed for exposure to the elements, and another abutted on a paved area that was almost certainly uncovered. On the other hand some of the midden accumulation between huts 9 and 6<sup>1</sup>, must be assigned to period II.

In any case the huts of the second village were eventually dismantled, only a couple of feet of the walls being left standing unless they could be incorporated in a subsequent structure. Huts 4<sup>1</sup> and 6<sup>1</sup> were left deserted long enough to become silted up with drift sand to the level of the wall stumps. Hut 9 was filled with midden and stones while hut 10 became a cesspool. Then over the wall-tops, the sand between them and the midden layers around them, fresh layers of midden or blue clay might be laid down to afford foundations for new hut walls of period III. The cesspool in hut 10 was hidden by a paving for which the sewage formed a bedding. The huts of period III were thus erected on a thoroughly artificial foundation.

The third village was not erected in a day. Huts 2 and 3 are built up against the walls of hut 1, apparently after a couple of feet of midden had accumulated round their bases so that the floors of the new huts are at a higher level than that of 1. Hut 4 is similarly built on to hut 5. The latter had from the first been protected by a casing-wall exposed on the west and south so that layers of sand alternating with midden had accumulated against its exterior. Then a section of the casing wall had been pulled down to make room for a small hut (6) which was built up against the inner wall of 5 on the west. But hut 6 in its turn was pulled down; all that remained of it was the door, a section of the north wall, and one 'limpet-box'. Its place was taken by a small cell just inside the door, the rest of the hut's site being used as a rubbish tip. So too hut 4, when first erected, had been exposed on the southeast and east. Here the hut wall has a neatly built face like that of hut 8, and this face had been carefully luted with blue clay, evidently to protect it from the weather. The

## ANTIQUITY

wall of its entrance passage, however, had, from an early date, if not from the start, been extended eastward and bent back to join the inner hut wall. The space thus enclosed was packed with midden, so forming a sort of buttress flanking the entry. Later this wall was extended to form a casing wall encircling the whole hut and joining up with the casing wall of 5 on the south. The space behind the casing wall was filled with midden till it became a sort of platform round the hut. This platform rose from a pavement laid at the base of the casing wall and continuing the line of passage A.

Viewing the history of the village in this light, one is tempted to ask how far the system of covered passages was original. When, for instance the area west of hut 5 was open ground, why should passage A have been roofed over or even walled on the south? The foundations for the south wall, however, go down 2 feet below the present level of the passage floor which coincides with the assumed floor level of hut 6; and the doorway of the latter marks a secondary breach in the passage wall. The south wall of A therefore goes back to a comparatively early period clearly anterior to the erection of hut 6. But there was no obvious point in roofing this passage till hut 6 was in position. Passage c clearly goes back to the beginning of period III if not before, since the walls of period II huts have been retained for incorporation in it. Hut 7 itself may have been founded in period II; for there are no remains beneath its floor, and the midden, assignable by the pottery to period II, is banked up against its southern wall. Passage c might therefore be regarded as originally leading onto the surface of the midden as it existed at the end of period II and with which the floor of the blind uncovered gallery is approximately level. There actually is a sort of gate between the wall of 9 and 7 in the passage. But again roofing would seem superfluous until the area between 5 and 7 had become filled with midden to the wall tops of 7, and here we have six layers of midden separated by interpolated streaks of sand, suggesting a gradual accumulation. It thus seems likely that the system of tunnels—that above all distinguishes Skara Brae—only came to maturity during period III.

The clearest indications of the reasons governing this development is given by the ultimate fate of the village. All the period III huts had been abandoned precipitately; the number and variety of valuable objects recovered from the hut floors testify to hasty desertion. But the most conclusive proof of haste was the discovery of hundreds of beads and fine amulets at the narrowest point in the door to hut 7 and



PLATE I



FIG. 1. SKARA BRAE  
Hut 7 showing hearth, beds, dresser and entrance to cell  
*Ph. Thos. Kent*

## PLATE II



FIG. 2. SKARA BRAE  
Exterior wall of hut 8 and porch built on to south end



FIG. 3. HUT 1: entrance to cell and bed  
*Ph. V. G. Childe*



PLATE III



FIG. 5. SKARA BRAE  
Door of Hut  
*Ph. V. G. Childe*



FIG. 4. SKARA BRAE  
Sewer under stratified midden  
*Ph. V. G. Childe*



PLATE IV



FIG. 6. SKARA BRAE: POTTERY 4

## SKARA BRAE

scattered along the immediately adjacent section of passage c. Their disposal proves that they had fallen from a necklace broken as its wearer was squeezing through the door in headlong flight. In all probability all six huts were abandoned simultaneously. But there are no suggestions of hostile violence. The huts had not been ransacked for booty till the modern excavator arrived; their furniture was undisturbed. But immediately upon their desertion sand began to accumulate on their floor.

This was not quite the end of the village. After 2 feet 6 inches of sand had accumulated in hut 7, effectively blocking up the door, some of the old folks returned to the ruins, built a hearth of the usual square form on the sand and ate venison and shell-fish beside it. Three other thin occupation deposits were found still higher up in the same hut, each layer of ash, shells and bones being separated from the one below by a foot or so of sand. These facts, to which early accounts of excavations in other huts suggest parallels, imply that after the great disaster remnants of the original villagers occasionally took shelter from the storms beneath the walls of ruined huts. They suggest further that the abandonment of the site itself was due simply to a storm of exceptional severity and to no attack by human foe. The enemy that eventually overthrew the village was then very likely that against which its original defences had been primarily directed. The tunnel-like passages, the low narrow doors, the western walls all facing the village, would make good defences against gales and moving sand-dunes; the little tricks so obviously designed to catch a human foe in an Irish *souterrain* are conspicuously absent. If the reader doubts the need for such elaborate precautions, he need only visit the site on a windy day when some sand dunes are deturfed, remembering that the villagers possessed only bone shovels. In a word the peculiarities of Skara Brae result from adaptation to a deteriorating climatic environment.

And now, how old is this curious village? Its high degree of specialization implies long development in comparative isolation, during a period partly represented by the immense accumulation of refuse. Architecturally Skara Brae is unique. We must rely upon the relics recovered from it to fix limits for its foundation and desertion. Unfortunately these relics are almost as peculiar as the village itself. One limiting factor may first be emphasized. Within a radius of two miles from our site are three typical brochs from which remains distinctive of the Scottish Iron Age may be collected. Now such

## ANTIQUITY

remains are conspicuously absent from Skara Brae. Not only has the village yielded no iron, nor objects certainly fashioned with metal tools, but it lacks equally distinctive broch types such as weaving-combs, handled cups of stone, and pots with everted rims. On the other hand we have now over a dozen stone celts, mostly adzes, and numbers of small disk-shaped scrapers of flint or chert, often quite as well worked as Tardenoisian specimens. The stone celts were hafted in deer's horn sockets of the type formed by cutting off a section of antler at both ends, hollowing out one end to make a socket, and making a perforation near the other. This is a comparatively rare type of haft going back to the mesolithic Maglemose culture in Denmark<sup>2</sup> but surviving into neolithic times in north France and Belgium.<sup>3</sup> Incidentally a crescentic pendant made from a segment of boar's tusk finds analogues in the same cycle of neolithic cultures. To the adze-like tools made from the metapodials of oxen (fig. 1, C1) there are likewise mesolithic parallels from Denmark<sup>4</sup> and, much more remote, from the alleged neolithic levels of the lake at West Furze in Holderness.<sup>5</sup> A curious spiked implement of flagstone as well as the bone 'pins' with lateral bulbs can be paralleled from the chambered tomb of Quoyness in Sanday, Orkney; but while the tradition inspiring such burial places goes back to neolithic times in Britain, Quoyness represents a highly specialized, and therefore possibly late, local variant. Still to other odd shale implements very close counterparts can be found in the realm of the belated Arctic Stone Age of Finland. However much one may discount the relevancy of these parallels, it seems clear that a truly neolithic tradition persisted at Skara Brae.

The pottery on the contrary has far less ambiguous Bronze Age affinities. It is indeed so badly fired that no complete pot can be reconstituted. (The bad firing may be due to the enforced use of peat for fuel, but the exceptional size of the grits incorporated in the paste is harder to excuse). We know that the vessels were built up by successive rings and had flat bottoms, often spreading out a little beyond the line of the walls. The sides were comparatively straight without handles, necks or shoulders; the rims were never bent out, as in Iron Age pottery, nor squashed down as in 'neolithic' wares.

---

<sup>2</sup> *Mem. Soc. Ant. du Nord*, 1919, p. 290.

<sup>3</sup> de Baye, *L'Arch. préh.*, p. 37; Loë, *Belgique ancienne*, pp. 148, 212, 230.

<sup>4</sup> *Mem. Soc. Ant. du Nord.*, 1926-7, p. 96.

<sup>5</sup> *Archaeologia*, LXII, p. 599. Most of the tools seem to have been merely hafts.



## SKARA BRAE

On the other hand they are often bevelled or stepped *on the inside* in precisely the same way as the rims of food-vessels and cinerary urns. Two methods of ornament—relief and incision—were current. In the first class, which is common to all three periods, the patterns are formed by strips or blobs of fine clay applied to the rougher surface of the vase and carefully smoothed on. This is precisely the technique employed on Abercromby's 'encrusted' group of cinerary urns. In the second class, confined to the first two periods, the patterns are incised with a blunt bone point in a finer clay, coating the coarse surface of the vessel. In either case the patterns can all be paralleled on cinerary urns of the British Bronze Age. There is one exception. The sherd of class II shown in fig. 6 is the only instance of a genuine spiral on pottery from prehistoric Britain. But the pattern was used by stone carvers of the Bronze Age, notably at New Grange and Lough Crew. Incidentally there are stones at Skara Brae carved with lozenges and other motives familiar to Bronze Age art. Hence, despite neolithic survivals, it is difficult to date Skara Brae earlier than the Bronze Age of Britain.

But there is at least one formidable argument for a much later date. The carved stone balls, of which Skara Brae has yielded four examples, recur on the Scottish mainland over a curiously restricted area coinciding to a surprising degree with that where 'Pictish symbols' are distributed.<sup>6</sup> Now the latter are regarded as post-Roman. If the concordant distribution denote contemporaneity, then the balls, and Skara Brae too, must be post-Roman. But in that case it is difficult to comprehend how such purely Bronze Age traditions could have lived on right through the best broch period (A.D. 0-300) without being contaminated seriously by the broch culture; for whatever its age in years, Skara Brae embodies at latest a Bronze Age tradition.

---

<sup>6</sup> *Proc. Royal Soc. Edin.*, L, pp. 70 ff, where the contrasts between Skara Brae and the normal broch culture are also set forth in detail as well as certain agreements with the 'later broch' culture.

# Hill-Forts

by CHRISTOPHER HAWKES

## A RETROSPECT

THE British hill-fort in these days needs no introduction. Everybody, certainly every reader of *ANTIQUITY*, is familiar with the ancient earthworks that crown the blunt spurs and whale-backed ridges of the chalk downs, and the grimmer ramparts of stone that take their place as one penetrates the lands of sharper contours and more obstinate rock that lie to the west and north.

In fact, they have caught the imagination in every age. To the early medieval mind, their creator might as often as not have been the Devil himself—while by contrast, when Camden brought in the Renaissance of British archaeology and topography, the Elizabethan age saw in them the stark memorials of the Empire of Rome which so dominated the visions of its scholarship. Belief in such names as Caesar's, Vespasian's and even Chlorus' Camp is indeed still dying hard, though the time is long past when to ascribe 'Camps' to 'the Britons' was an eccentric flight of 18th-century conjecture, and pre-historic man, their genuine author, has since then been favoured with an almost distorting flood-light of publicity.

But the intelligent British public has loved to cradle romances in the labours of its scientists and historians, and it was actually the solid achievement of Victorian archaeology in establishing the normally prehistoric character of our hill-forts that next made them for so many the misty fastnesses of a remote Stone Age. Yet the popular enthusiasm so aroused brought in a great period of discovery and survey in the twenty years or so before the war, during which a mass of valuable material was collected and published to give a lead to the workers in the present-day field of scientific excavation.

In that field the labours of ten years and more have set the hill-forts of this country, broadly speaking, in their true historical perspective as the peculiar product of the latest of the prehistoric periods, the Early Iron Age, which began about the 6th century B.C. and was sealed at last by the Roman conquest.

PLATE I



MAIDEN CASTLE, DORSET

The curved line across the upper portion of the camp marks the junction of the two photos used

*Crown copyright reserved*





## HILL-FORTS

In the following pages, only those forts will be noticed in which some form of excavation has taken place, and only those where the fortifications themselves have been examined and their period fixed will be treated as certain examples of their class. Where digging or significant finds have attested an occupation but have not dated the fortifications, the attribution will be qualified accordingly. But forts known by surface inspection only, however tempting their outward features, will here be ignored, and such generalizations as are made will be based on excavated examples only. These form, of course, an extremely small proportion of the whole number, but it seems desirable now, when co-ordination of field work is in the air, to attempt a review of what hill-fort excavation has so far accomplished, thereby indeed emphasizing the gaps in our knowledge.

### THE HISTORICAL SETTING

Where populations are sparse, primitive peoples tend naturally to a nomadic life. Pastoral communities want fresh grazing-grounds, and agricultural folk whose crude tillage is soon exhausted will likewise shift their settlements. When men are few, and living free from threat of serious danger like regular invasion, this tendency will inevitably assert itself—it does so in the Congo today, and it did so over long periods of prehistoric time throughout most of Europe. Such men will not undertake the labour of erecting defences in earth or stone, either as a ‘camp of refuge’ for occasional use, or as a ‘fort’ for permanent habitation, unless something happens to upset their normal existence—that is, unless warfare or the threat of it becomes a constant factor in life, either because of invasion or of such a general growth of population as will provoke tribal hostilities.

Not until late in the Neolithic Age are fortifications known in Britain, and these ‘Neolithic Camps’, with ditches broken by causeways,<sup>1</sup> ceased to be occupied at the latest soon after the appearance of the Beaker-people, which marks, early in the second millennium B.C., the transition to the Bronze Age. Evidently they belong to an exceptional

---

<sup>1</sup> Fully described by Dr E. Cecil Curwen in *ANTIQUITY* 1930, IV, 22–54, and thus needing no further discussion here. All known neolithic earthworks in Britain are of this causewayed type. The ‘Danes’ Dyke’, indeed, the great simple promontory-fortress of Flamborough Head, was excavated by Pitt-Rivers and found to be associated with a flint industry of neolithic character—but until the whole complex of dykes in the East Riding is systematically examined it would be premature to try to date it closely.

## ANTIQUITY

period which then passed away. Britain was not disturbed by invasion, still less over-populated, for many centuries afterwards, and as far as we know hill-forts were no more.

But a change in conditions came at last. Central Europe early in the first millennium B.C. was reaching a stage of denser population and acuter tribal consciousness, and with the growth of commerce and craftsmanship the incitements and the means to wage war multiplied together. The introduction of iron, which marks the beginning of the so-called Hallstatt period, was nothing less than a revolution, which accentuated this whole tendency: warfare was the natural result, and with it fortifications became all the more inevitable owing to the increased contacts with those Mediterranean lands where their construction had long been an established art.

Among the groups soon to emerge into history as the Celts, bronze-users inevitably went down before iron-users, and refugees consequently appear in the west, notably in Britain and Ireland, where they were seemingly the first immigrant bearers of Celtic blood and speech. Whether or no they erected hill-forts, some of them certainly made small square 'pastoral enclosures' or kraals, not unlike the partly contemporary *Viereckschänze* of the Rhineland, to defend their stock. And before long there came dangers more formidable than cattle-raiding, for these Late Bronze Age movements were followed and even probably overlapped by new immigrations to further the Celticization of Britain, which introduced iron and a Late Hallstatt culture.

The great Celtic expansion over Europe of which these formed part had as its main immediate cause the growing pressure of the Germanic peoples, advancing southwards from the Baltic. It was the Celts of the Lower Rhine who first felt this pressure, in the 7th century B.C., and a mingling of Celtic and Germanic features soon begins to be perceptible in the archaeology of that region: the pressure increased, and while the mixed Celto-German culture was destined to persist there for many centuries, and to produce the Belgae of our Iron Age c, a great dispersal of Celts inevitably began. It reached its height in the 6th century, when those groups who crossed over to Britain became our principal Early Iron Age immigrants. Another wave reached the Pyrenees and northern Spain, while the main German advance up the Rhine forced the Celts there into lateral expansion. This was happening just at the time when they were founding the great tradition we call the La Tène culture, which superseded that of the Hallstatt period and was at last merged in the provincial civilization of the Roman Empire.





FIG. 1. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD A

A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as assumed from known material

## ANTIQUITY

Westward expansion in these years brought it into France, whence other Celts, still of Late Hallstatt culture, were displaced; some of them also migrated to Britain, whither they were not pursued.

Thus was completed our widespread agglomeration of Late Hallstatt immigrant groups, predominantly Celtic in blood, but inevitably including other racial elements out of the melting-pot of contemporary Europe. Fusing here and there with the Late Bronze Age peoples, they established Iron Age civilization all over the south and southeast of Britain.

The advance which they brought in tribal economy, and the economic and military revolution implied by the new metal, made absolute the change, already begun, from the old roving life of the country to conditions resembling those of the Hallstatt period abroad. Those conditions involved the idea and practice of hill-fort building. The hill-forts were the citadels of tribal groups, and their numerical increase in Britain in the centuries following the immigration attests tribal consolidation and development. The limits of the penetration are shown on the map, fig. 1, along with the distribution of hill-forts; these form about a quarter of the total number of the people's known habitation-sites, which are thickest on the open uplands, especially the Wessex and Sussex chalk, that gave them the easiest tillage and pasture.

The main block of their area remained in their undisturbed tenure till the 1st century B.C., and their civilization, though essentially of Hallstatt character, soon began to absorb influence from the La Tène culture across the Channel. Thus it really requires a name of its own: here we shall be content to call it 'Iron Age A',<sup>2</sup> and the succeeding immigrant cultures 'Iron Age B' and 'C'. The former, in the southwest and northeast, merely bit into its fringes; it was only the latter, brought by the Belgae, that superseded it in its real home, and in some districts, notably east Sussex, it was never superseded at all till the Roman conquest.

We can now turn to examine the known hill-forts of Iron Age in something like detail.

### IRON AGE A

#### (a) *The known forts*

Hill-forts have been classified according to type by the Earthworks

---

<sup>2</sup> The pottery exhibits some regional variation, but the village at All Cannings Cross is the most famous approach to a type-site.





## ANTIQUITY

Committee<sup>3</sup>—their first class may be intelligibly described as promontory-forts; their second as comprising contour-forts, where the defences follow the natural line of the hill; and plateau-forts, where they are less dependent for protection on any natural slope. This classification is of course no more a criterion of date than one based on mere size—the forts of Iron Age A vary greatly in size and may belong to any one of the committee's classes. The only reservation as regards their type seems to be the absence of more than a single line of encircling rampart, and of *complex* outworks guarding an entrance.

In fact, most of the known works of this phase are contour-forts. But promontory-forts also exist: that of BUTSER HILL, formed apparently by re-fortifying a deserted neolithic work, is very possibly an example, and the double ramparts across HENGISTBURY HEAD defend a well-known site first regularly occupied early in Iron Age A, to which the main work is likely to belong.

The promontory-fort of LECKHAMPTON above Cheltenham is a clearer case: it underwent improvement in a late stage of Iron Age B (see below, figs. 10 and 13, pp. 82, 88), but the original wide shallow ditch is dated by pottery to the earlier phase, and must be correlated with the stone-cored earthy rampart behind the later rubble facing-wall.

The works of the other class consist as a rule of a single rampart and ditch, though the early stone-built fort of CHASTLETON on the Cotswolds recently examined by Mr E. T. Leeds is ditchless, and at FIGSBURY RINGS in Wiltshire the outer ditch is incomplete, a 'quarry ditch' inside the fort having apparently been used to get most of the material for the rampart.

The area of Figsbury is about 15 acres—a rather larger fort, that of ST. CATHARINE'S HILL, a bare half mile outside Winchester on the south, may be taken as more typical of the larger works of this period (fig. 2). It is roughly an oval of 23 acres, with one entrance on the northeast, to which we shall return; between this and the summit of the hill (afterwards the site of a chapel), the inhabitants had their main cluster of pit-dwellings. Rather stronger and smaller, but in many respects very like this is the fort called THE TRUNDLE, above Goodwood, which contained similar pit-dwellings, but has two entrances. It covers the site of a neolithic camp with causeways, and continued in occupation till a date in the 1st century B.C., or about a century longer

---

<sup>3</sup> *Scheme for recording Ancient Defensive Earthworks and Fortified Enclosures*: Congress of Archaeological Societies (revised 1910), classes A and B.

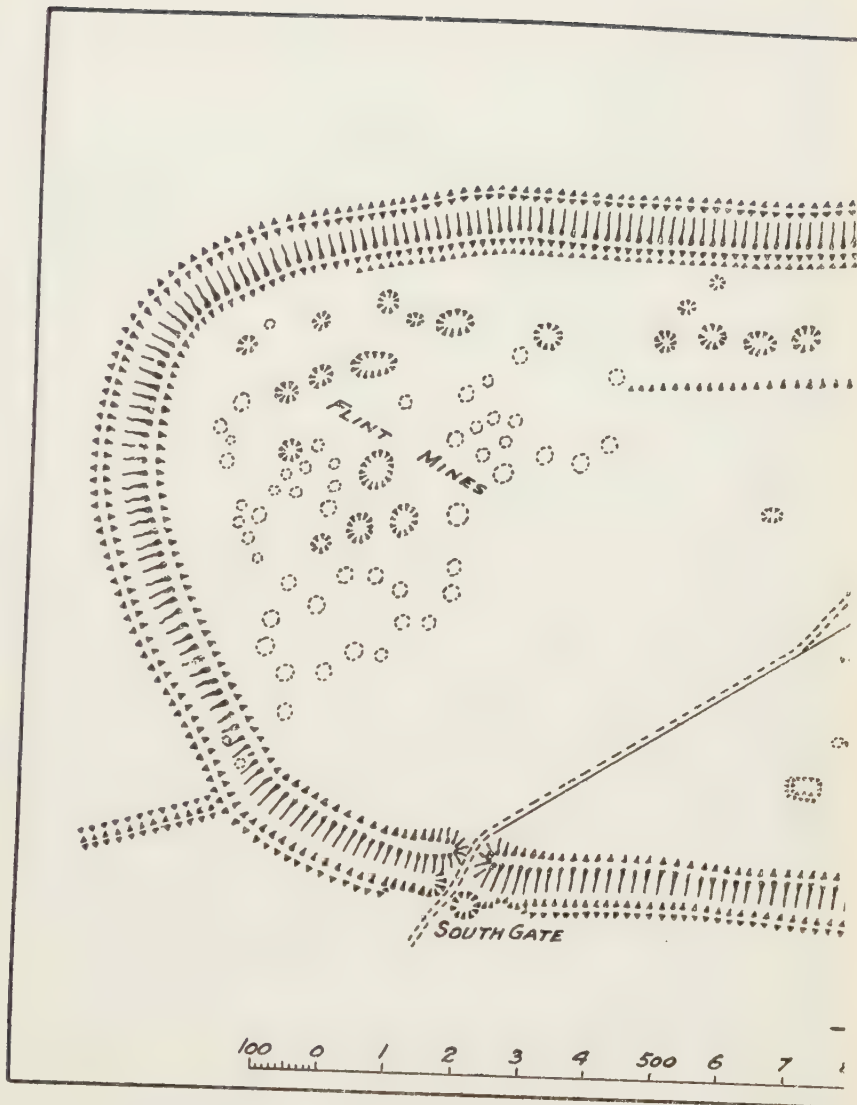
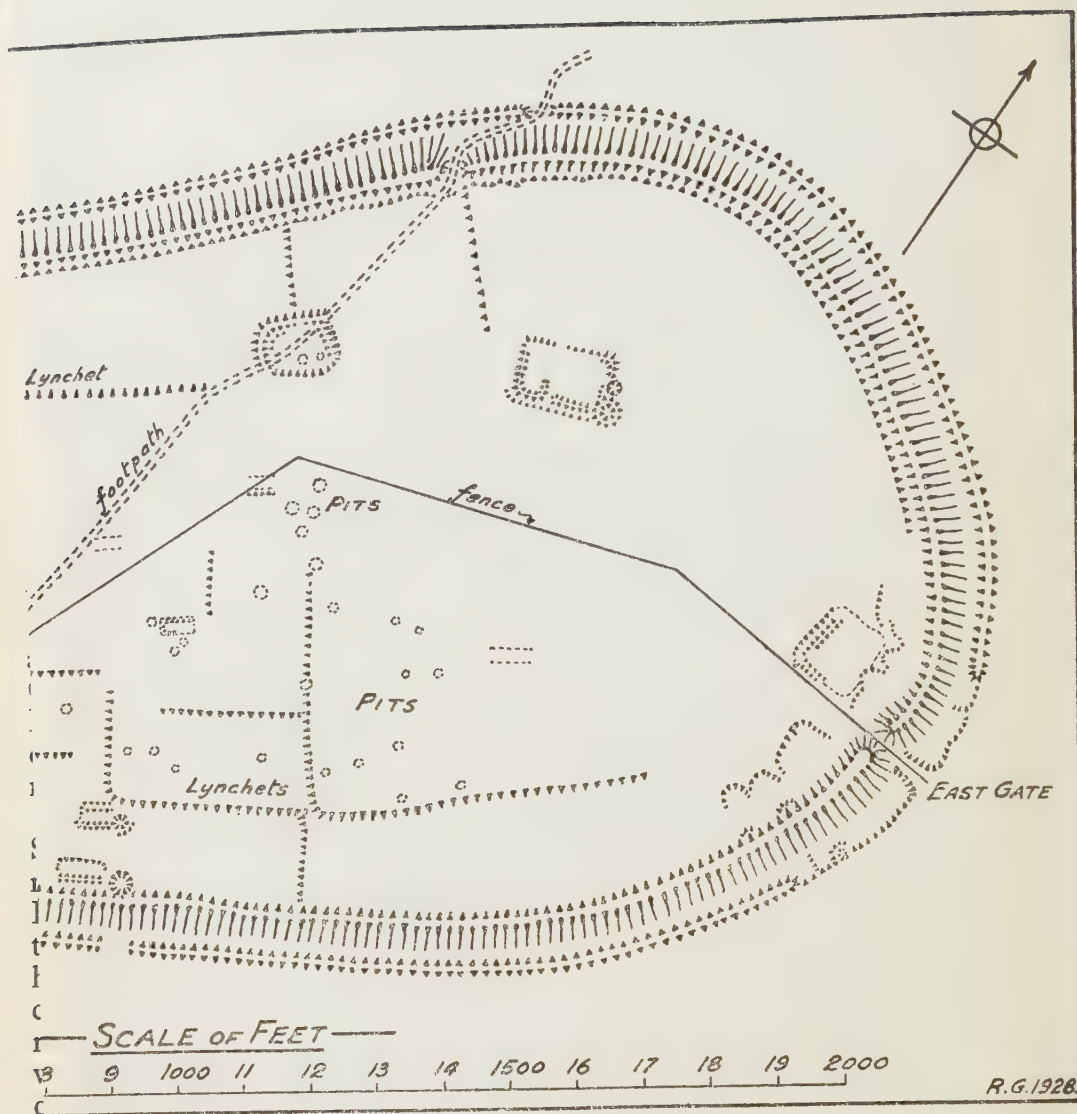


FIG. 3.  
From Curwen's *Prehistory*

facing p. 67



PLAN OF CISSBURY, DORSET  
 ic Sussex by courtesy of the Homeland Association



## HILL-FORTS

than St. Catharine's Hill. THE CABURN, above Lewes, had a still longer life; the single earthwork was supplemented later on (1st century B.C. or A.D.) by a stronger rampart outside it, with complicated entrance-defences in the later Iron Age style. The pit-dwellings within were very numerous; in fact, the Caburn was a populous fortified town, as indeed most excavated hill-forts have proved to be, though there are exceptions, of which in this period Figsbury Rings is the chief, where the traces of occupation are scanty enough to suggest intermittent use only as a 'camp of refuge'. This is a point on which there will be more to say presently.

But the best known and most imposing hill-fort on all the Sussex Downs is CISSBURY (fig. 3), and the Worthing Field Club's recent excavations have established that it too belongs to Iron Age A and was probably erected about the turn of the 4th and 3rd centuries B.C. The great rampart, which includes most of the area of the famous neolithic flint-mines, encloses a full 60 acres, and must have been intended in times of danger to hold, in addition to the permanent population whose pits are shown on the plan, the people and stock of many unfortified villages in the country round, like the well-known ones at Park Brow and Findon Park not far away. Cissbury may thus be said to combine the characters of a permanently settled hill-fort and a 'camp of refuge'.

At LIDBURY CAMP, Wilts, there has been alteration, but both the original and the amended plan belong to Iron Age A and illustrate an important tendency in the art of fortifying entrances, as will shortly be explained. SOLSBURY HILL above Bath, is also of this period, but quarrying has left too little of the rampart for a full appreciation: it was clearly a fairly normal contour-fort.

Lidbury has a rather angular outline, and this is still more noticeably true of LIDDINGTON CASTLE, Wilts, which occupies a promontory-site and approaches quadrilateral form; of HOLLINGBURY, a squarish work above Brighton; and of BEACON HILL camp, Harting. These are not of great size (8-9 acres), and all have yielded Iron Age A pottery, though in the latter two cases the association with the earthwork has not been proved.

This form suggests an enlargement of the Late Bronze Age square kraal, which was itself certainly still in use in our period. At THUNDERS-BARROW HILL above Portslade such a square kraal, certainly of Iron Age A, was apparently superseded by a smallish circular hill-fort: the latter has not been dated, but at SAXONBURY in Ashdown Forest an oval stone enclosure, apparently a variant of the square kraal, was similarly

## ANTIQUITY

superseded by a small hill-fort belonging to the century or so before the Roman conquest, that is, contemporary with the outer rampart at the Caburn. A similar sequence earlier is found at WOLSTONBURY near Brighton, where both the inner oval enclosure and the wider outer one have been proved to belong to the first half of Iron Age A, though the latter definitely supersedes the former.

A peculiarity of Wolstonbury is that the ditch of the outer ring is inside the rampart.<sup>4</sup> It is of course easier to throw up a rampart below than above the ditch which supplies its material, but perhaps there is a fuller explanation yet unrevealed. The sequence of smaller and larger enclosures is anyhow an interesting point. In east Sussex, where Iron Age A lasts until Roman times, there is not such difficulty concerning successive occupations as demands caution in Dorset.

At HAMBLEDON HILL the first fort on the northern spur, itself certainly of Iron Age A, was subsequently enlarged and altered to a degree that makes precision difficult about its original defences, which may possibly upset the generalization put forward above by proving to have been double from the first. Their later phases may be due to Iron Age B as well as C people ; but uncertainty surrounds the former's penetration here from the west, and the full history of forts like this and SPETTISBURY, where excavation has not been scientific, is still obscure.<sup>5</sup>

EGGARDUN has at least yielded apparent Iron Age A material mainly, and the inner ditch bottom at DUDSBURY has produced Iron Age A pottery,<sup>6</sup> though in both complex defences suggest a sequence of occupations and plans. Its excavators indeed considered Eggardun neolithic, but this was before the recognition of true neolithic features in either earthwork or pottery ; its many pit-dwellings are of regular Iron Age type, and the associated flint industry occurs elsewhere in Iron Age settlements, though the variations of its prevalence have yet to be explained. It certainly occurs north of the Thames also, notably at the two excavated forts of Epping Forest, LOUGHTON CAMP and AMBRESBURY BANKS. Both were dug by Pitt-Rivers, and Mr Hazzledine Warren's recent renewal of work at Loughton has made it clear that the earthwork and the flint industry both belong to Iron Age A, as

---

<sup>4</sup> This also occurs at Rybury in Wiltshire, overlying what seem to be neolithic works.

<sup>5</sup> See p. 81.

<sup>6</sup> Information kindly supplied by Mr Heywood Sumner, F.S.A., who has allowed me to examine the pottery from his trial excavations ; the responsibility for this dating of it is, of course, my own only.

## HILL-FORTS

attested by pottery, a conclusion which plainly holds good also for Ambresbury. In both the flint industry is of neolithic character and must be a direct survival of that primitive tradition.

To the north, along the belt of open chalk followed by the Icknield Way, the WAR DITCHES, Cherry Hinton, also dates originally from Iron Age A, and produced flints along with native and a piece of Gaulish pottery. Near it on the Gog Magogs, WANDLEBURY is probably coeval, but its defences may not have been tripled till Iron Age C, when coins show it was still occupied. ARBURY BANKS near Ashwell, where the defences are partly double, had probably an analogous history: it covers some 12 acres and contained pit-dwellings. The scanty known pottery is Iron Age C, but earlier occupation is not excluded.

The neighbouring fort, now almost ploughed out, of WILLBURY, on the Icknield Way and commanding the Hitchin gap, must have been fairly similar. The excavated pottery shows a clear sequence through Iron Age A to the Belgic forms of C. Pottery of both these phases has also been found at the ploughed-out fort at WALLINGTON, Surrey, but it was A pottery that characterized the yield of the ditch. It had apparently been used for cooking as well as defence, and there were further suggestions of an Iron Age C occupation in which the defences were no longer used as such. In Berkshire, pottery seemingly of Iron Age A has been found at the marsh-island fort of CHERBURY, and its ring of earthwork is likely, though not certain, to belong to this phase. On the downs to the south the defences of UFFINGTON CASTLE are definitely dated by pottery, and ALFRED'S CASTLE near by may be contemporary. Surface sherds with the same implication are plentiful at WITTENHAM CLUMPS, as also in Hampshire at OLIVER'S BATTERY near Alresford. In fact, a large proportion of the hill-forts of southern England will probably turn out to belong to, or at least to have originated in, Iron Age A.

However, we shall find instances of later Iron Age fortifications appearing on the sites of settlements of the earlier phase which were themselves undefended, and it must not hastily be assumed, with a view to augmenting this list, that pottery or other material discovered inside the enclosure of a hill-fort must inevitably date its defences. Careful digging in the defences themselves is of course required, and this suggests the devoting of a few paragraphs to the constructional features that such excavation has revealed.



## ANTIQUITY

### (b) *Stonework and Earthwork*

If a rampart built wholly of dry stone is to have the vertical faces required to make it a sufficient obstacle to an enemy, the facing at least must be carefully coursed,<sup>7</sup> and where stone of the right shape is naturally present, such as the oolite ' slate ' of the Cotswolds, this was done in our period, as for instance at Chastleton. But over much of the south of England such stone is absent, and in the chalk country the nearest observed approach to such a method is the facing of a chalk rampart with blocks of sarsen ; this was certainly done at Alfred's Castle and Uffington Castle. In the absence of such stone all that can be done with an earth rampart without timbering, which will be considered below, is to pile the material dug from the ditch solidly enough to form a defensible slope. To this end material weak in itself is better consigned to the bottom of the inner core, and this is the natural place for heaping of surface soil, scraped very often not only from the line of the ditch but also from inside that of the earthwork. Over this comes the more solid stuff reached by digging the ditch deeper, carried up presumably in skin bags or baskets and laid in regular and compact tips. On these as a base the top of the rampart will be made up with the big lumps from the bottom of the ditch. Frost and rain will in a single winter coagulate the surface of a bank so built into a hard crust, which soon bears turf, and this binding is normally indestructible. Fig. 4 gives a cross-section of the St. Catharine's Hill rampart, showing seven successive tips piled as here explained.<sup>8</sup> In this case they were easily distinguishable by the quality of their material and by the sharpness of their surface-lines ; however, in some cases they were covered with layers of turf binding to give stability, and these show up as seams of dark mould in a cross-section. Care is required in distinguishing such seams from occupied surface strata which would indicate successive enlargements of a rampart at different dates : at Figsbury Rings, for instance, the excavators suggested the presence of both types of seam in the same rampart,

---

<sup>7</sup> The special case of so-called ' vitrified forts ', where a stone rampart is supposed to have been vitrified or calcined into a solid mass by subjecting it to intense heat, cannot be considered here : it deserves a paper to itself. Such forts are well known on the Continent and exist in Scotland and Ireland, but are unrecorded in England and Wales.

<sup>8</sup> The seventh is a patching of earth to complete the contour of the sixth.

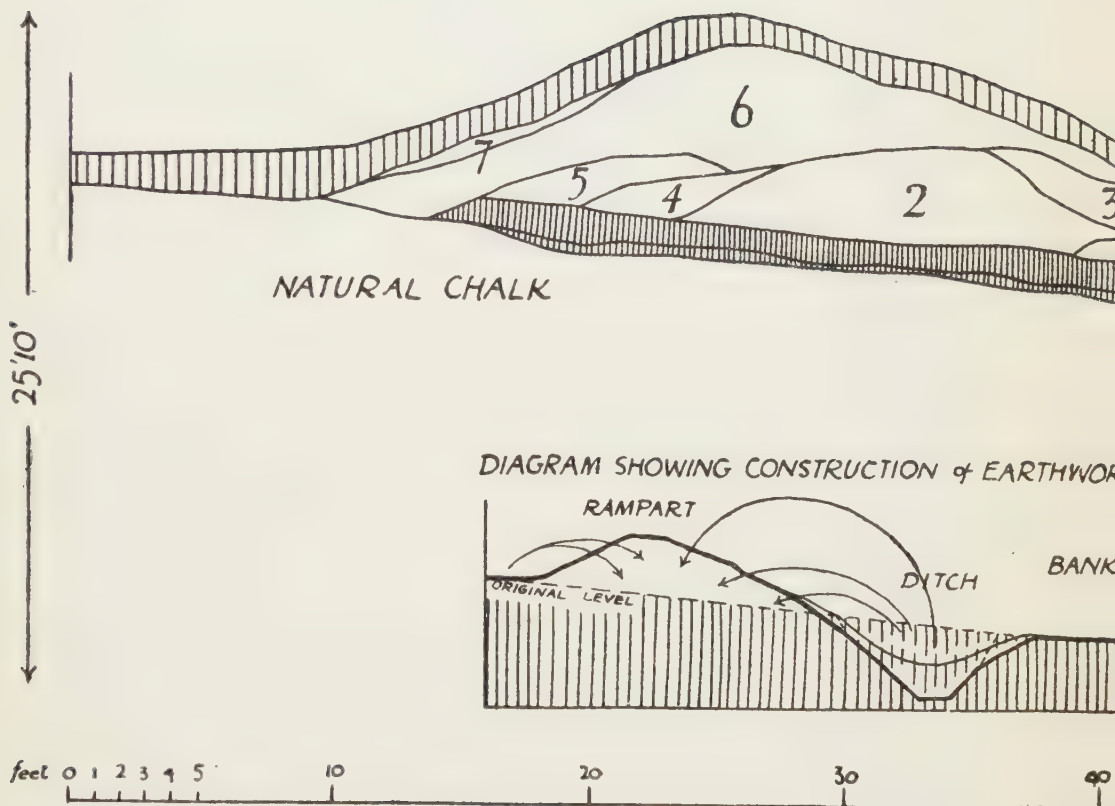





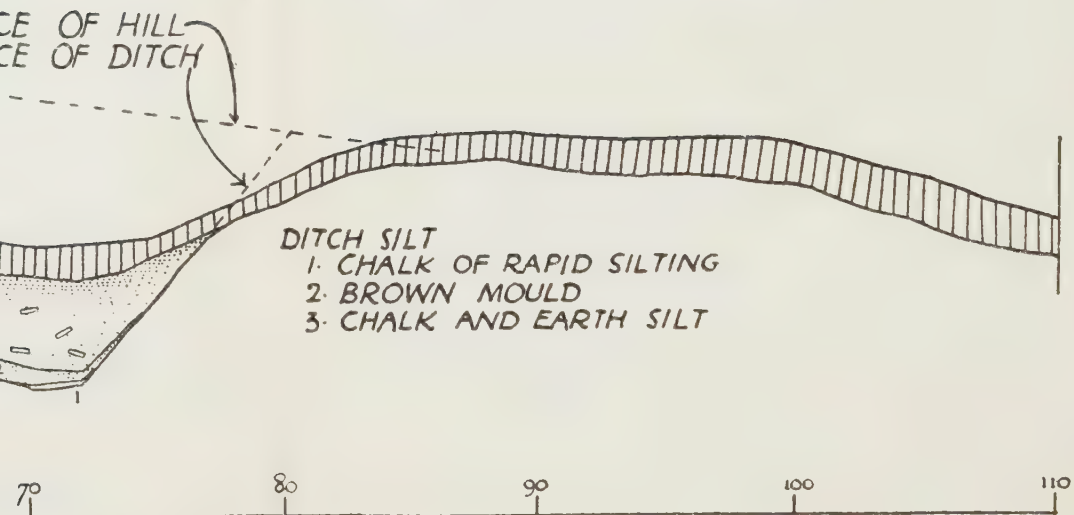


FIG. 4. ST. CATHARINE'S

- |   |                         |
|---|-------------------------|
|  | MODERN TURF and SUBSOIL |
|  | OLD TURF and SUBSOIL    |
|  | MADE CHALK              |
|  | CLEAN CHALK SILT        |
|  | BROWN MOULD             |



CONSTRUCTION IN TIPS

facing p. 70



## HILL-FORTS

as sketched in fig. 5. At Leckhampton, on the other hand (see below, fig. 10, p. 82), the rampart was deliberately built with a stone core surmounted with earthy make-up.

### (c) *Timberwork*

The rarity of recorded timberwork in British hill-fortifications is at first sight surprising. Timber revetments were certainly used in Iron Age A for entrance defences, as will shortly be seen, and one would expect them along the lines of ramparts also, but in fact the recent excavations at Cissbury are the first in which the bedding-trench for one has been found, running along the foot of the rampart above the

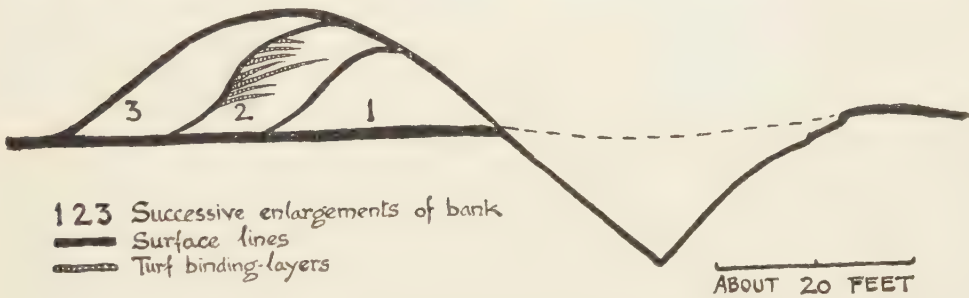


FIG. 5. FIGSBURY, CROSS-SECTION OF RAMPART AND DITCH showing successive enlargements and turf binding

ditch (as A, fig. 6). It is more than likely that erosion has destroyed this indication in other excavated cases.

Such a revetment may have been carried up to form a palisade above, but there is also a different case to be noticed. In the inner rampart of the Caburn, Pitt-Rivers discovered stake-holes aligned at irregular intervals near but well within its outer edge: the timbers in these must have been carried up through it to support a breastwork above the face of the slope (B in fig. 6).

Lastly, a little-known discovery made in the 1850's by Edward Martin-Atkins at Uffington Castle seems to combine these two devices. Along the outer foot of the rampart, he found one row of post-holes (some containing clearly Iron Age A pottery), and 5-6 ft. inwards from this another, parallel to it, and dug down likewise in the natural ground. One of the inner row of holes was still open right up through the rampart to within a foot of its surface, with the chalk around it 'in a

## ANTIQUITY

hardened mass, as if from being rammed when wet'. He concluded that a double revetment of posts and wattling, with rammed chalk rubble between, formed the main line of defence (10ft. or so high),<sup>9</sup> backed by a sloping embankment a few feet lower, so that the upper part of the timbers also served as a breastwork (c, fig. 6). This is the nearest approach to timber construction abroad yet found in Britain in Iron Age A.

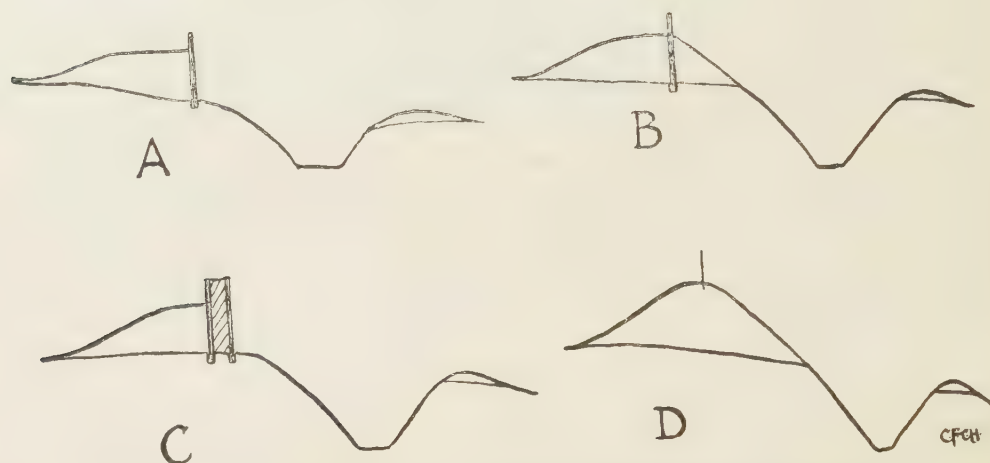


FIG. 6. Diagram showing recorded (A-C) and possible (D) types of timberwork in hill-fort defences

For the popular idea that the crest of a hill-fort rampart was normally crowned by an ordinary palisade (D in fig. 6) excavation has so far produced no evidence. One can only conclude that such a palisade, if it existed anywhere, was a light and perhaps temporary fence only which will almost inevitably have vanished without a trace, as it would not require a bedding-trench or post-holes deep enough to escape natural surface disintegration.

### (d) Entrances

Entrances are naturally the weakest points in any defensive lines, and as early as the Hallstatt period special devices for their protection are found in Central European forts. Chief among these are the inturning of the rampart-ends on either side of the approach, and the

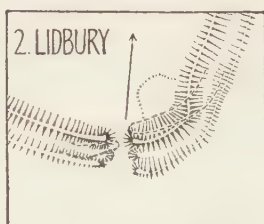
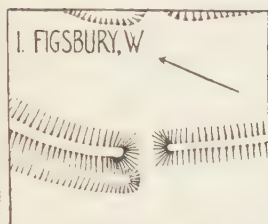
<sup>9</sup> He says nothing of the sarsen facing more recently noticed (p. 70).

# BRITISH HILL FORTS: TYPES OF ENTRANCE

EARLIER: A

B

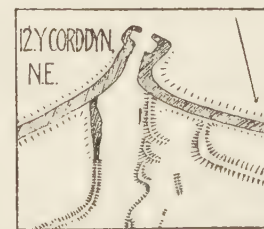
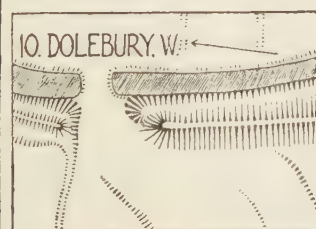
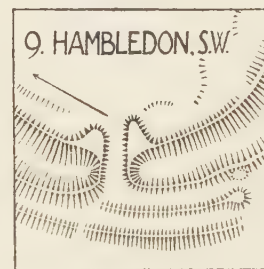
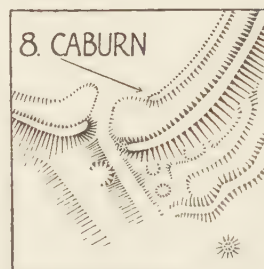
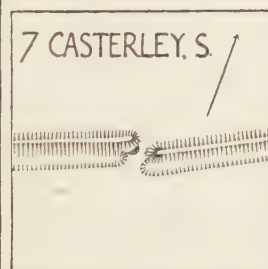
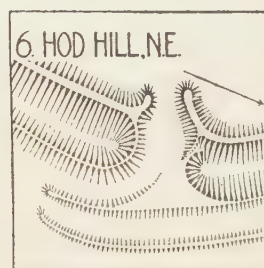
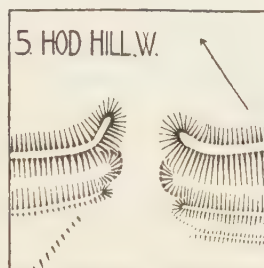
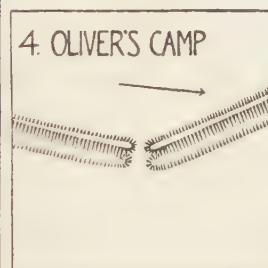
C



LATER: A

B

C



SCALE 0 50 100 200 300 400 500 FEET

after Col. 1929

FIG. 7. COMPARATIVE CHART ILLUSTRATING THE TYPOLOGY OF ENTRANCES  
The arrow marking true north is in every case *inside* the fortified area



## ANTIQUITY

setting of the whole entrance askew, so as to expose the flank of a storming-party: simple outworks may also be found to mask the causeway piercing the ditch. As we should expect, these devices were brought to Britain by the people of Iron Age A. Simple entrances (A in fig. 7) of course occur, as at Figsbury (no. 1) and also at first at Lidbury (no. 2). Here the original line of the ditch is marked by broken lines on the plan, but later in the same period the rampart-ends were thrown forward over the old ditch with a slight inward curve, the better to command the approach.

As well as this gentle incurving (B) there is also the sharply inturned type (C), exemplified by St. Catharine's Hill (fig. 7, no. 3). The low bank outside the ditch (also present at Lidbury and elsewhere) was here doubled as a simple outwork and the whole entrance set slightly askew. But the most important feature of the works is the revetting of the whole entrance with timber, backed with clay. The history of this entrance falls into four periods, all included in Iron Age A, and reconstructed in fig. 8. At first it had, behind a double gate, a quadrangular guard-house on either side of the passage-way, cut back into the ramparts and timber-built continuously with the revetment. These were subsequently dismantled, and for a long time the bays so formed were left to silt up, and the whole defensive scheme was neglected. After this peaceful period the works were suddenly reconditioned: the ditch was recut, the ramparts enlarged, and the passage-way half blocked with a deeply-bedded stockade, which was buttressed, along with much of the revetment, with walls of chalk blocks. Lastly, all this in turn was dismantled and the entrance was left once more unprotected, without even a gate.

At the Trundle, the east gate has yielded a sequence of plans most interesting to compare with this.<sup>10</sup> The original double gateway was rather like that of St. Catharine's Hill period A without revetments or guardhouses. Next, the defences were completely re-arranged, with two single gates placed one behind the other so as to form a barbican, complete with flanking revetments. This scheme answers to period C at St. Catharine's Hill; but the series closes, perhaps as late as the 1st century B.C. when St. Catharine's Hill had been destroyed, with the innovation, without parallel elsewhere, of three large pits across the inner end of the approach to hold three immense gateposts, each one

---

<sup>10</sup> The excavator, Dr E. Cecil Curwen, has most courteously enabled the writer to anticipate here the forthcoming report in *Sussex Arch. Colls.*

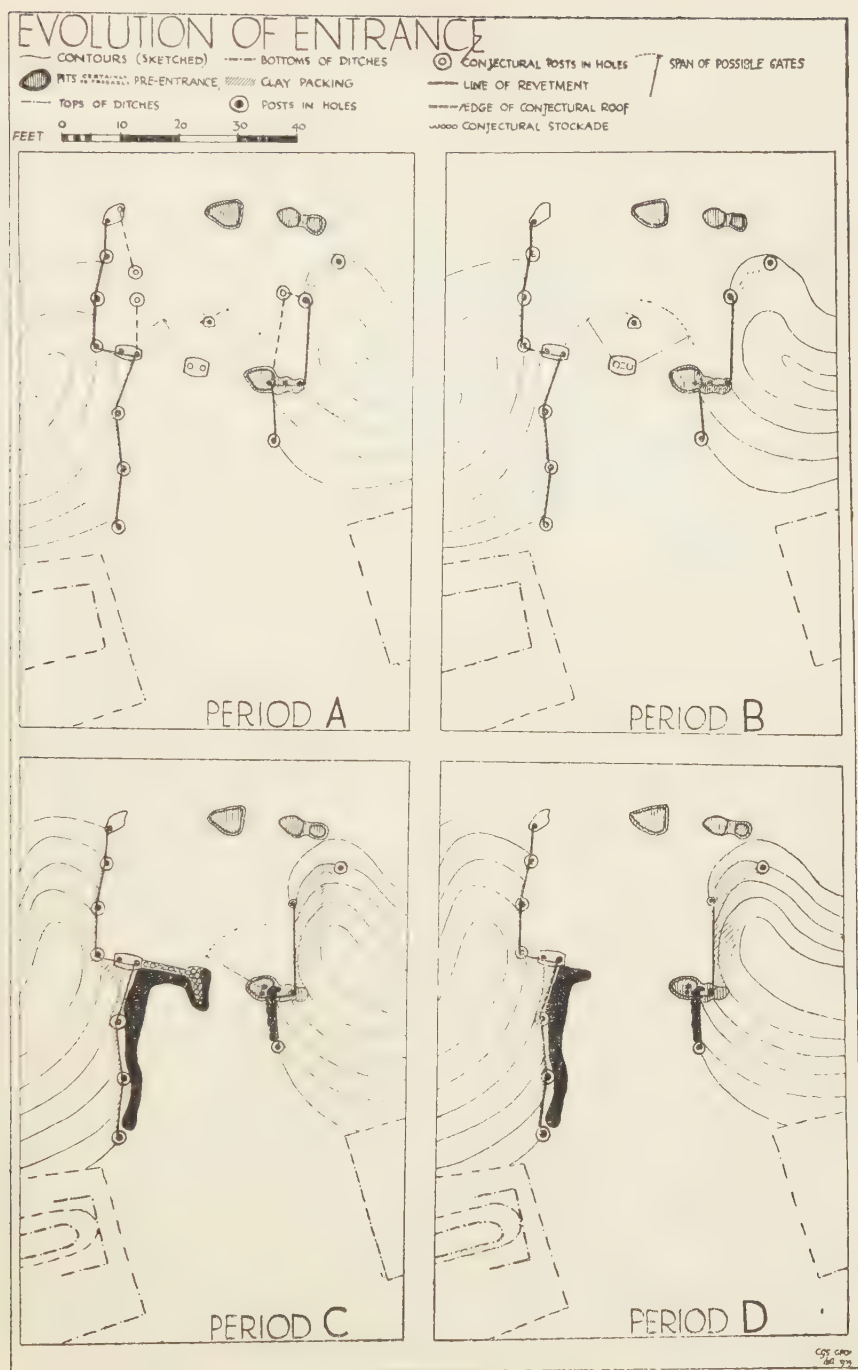


FIG. 8. EVOLUTION OF THE ENTRANCE AT ST. CATHARINE'S HILL

## ANTIQUITY

evidently a whole tree-trunk. It appears that these represent a grandiose scheme of fortification, begun shortly before the final evacuation and never finished: the same thing was apparently done at the west gate.

These two sequences, indicating, like the successive enlargements of the Figsbury rampart, the recurrence at varying intervals of emergencies requiring new defensive works, may lead us to a summary review of Iron Age A and its forts.

### (e) *Conclusions*

It seems that while war was a danger which had to be reckoned with and demanded fortifications, its outbreak was in fact exceptional. In the more normal times of peace, permanently inhabited forts could be allowed to fall out of repair, and some 'camps of refuge' were altogether deserted.

But from time to time hostilities broke out, the country folk with their stock crowded into their tribal stronghold, and its defences, often perhaps hurriedly, were reconditioned to withstand assault. This incidentally helps to explain what has puzzled so many people, the absence of a water-supply inside most hill-forts. Regular sieges were plainly undreamed of, and there would normally be nothing to interfere with the fetching of water from a source outside the defences, and often indeed far below them, as it is fetched by the dwellers in the modern hill-forts of Algeria.<sup>11</sup> But the permanent presence of so many great ramparts was justified, for as there were no doubt constant tribal bickerings, warfare must always have been liable to spring from the background into the foreground of existence.

## IRON AGE B

### (a) *The Southwestern Immigration*

We have already noticed that before the end of the 6th century B.C. Celtic emigrants from the Lower Rhine found their way to the Pyrenees and northern Spain. The latter region was intimately linked with southwestern Britain by the Atlantic tin trade, which the Celts were soon dominating. It was, moreover, they who built the characteristic hill-forts in the northwest of the Peninsula, massive stone ring-works, often of polygonal masonry, containing circular stone dwellings.

---

<sup>11</sup> ANTIQUITY, Dec. 1927, I, 397.



## HILL-FORTS

Mr Leeds has contended that the stone hill-forts of the tin district of Cornwall are the work of Celtic immigrants hither from north Spain ; the argument is mainly based on the tin trade, certain significant brooches, decorated pottery, and the similarity of the forts, which is certainly close enough to attract attention.

Still, Spain need not be the only source of immigration : the whole Atlantic seaboard was always strongly interconnected, and origins must also be sought in Brittany, where Celts from further east were before long also established. Material which Mr Leeds finds significant is present there too, and the cross-channel connexion already attested by archaeology and later emphasized by Caesar's account of the Veneti is clearly an important factor in directing Celtic movement into Britain from this quarter.

Beginning in the 4th century B.C. the immigration was soon spreading all over the southwestern counties, where the Celts evidently dominated while mixing with the native population. The discernible Spanish influence in their culture was anyhow before long surpassed by that of Brittany ; the La Tène art and craftsmanship they thus developed is distinctive, and at its best well in advance of Iron Age A. The latter continued to exist largely undisturbed in the southeast, and its backward character implies little active continental connexion. The Iron Age B people, on the other hand, retained close trading and cultural links with Brittany and the lands beyond. From Cornwall and Devon they spread over Somerset and on to the Cotswold, absorbing or driving out such Iron Age A people as they found, and superseding their settlements. The degree of their penetration into Dorset is as yet uncertain, but their typical pottery certainly reached Hengistbury Head. They crossed the Severn Sea, and though they perhaps hardly penetrated inland beyond it, they seem to have pushed past the upper Thames basin northeast into the Midlands along the edge of the Iron Age A area.

Their culture, first appearing well back in the continental La Tène I, lasted till its subjection to Rome at the end of La Tène III in the 1st century A.D. In the latter phase their hill-forts had attained to a size and complexity never found in Iron Age A. Multiple lines of earthwork, complicated entrance defences, and great size and strength become characteristic of their work. Unhappily, the multitude of forts waiting for excavation to be definitely credited to their hand is out of all proportion to the known examples. It is from their famous lake-villages, inevitably exceptional forms of settlement, that we know their

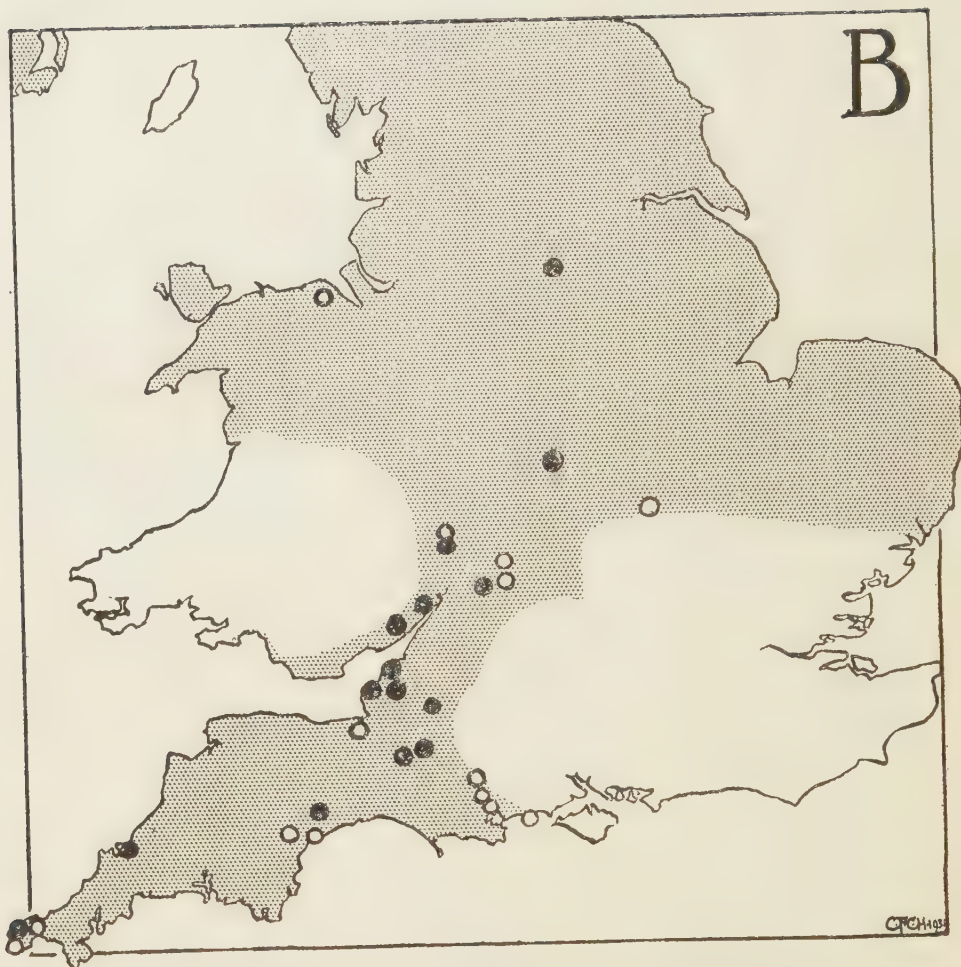


FIG. 9. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD B  
 A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as assumed from known material

## HILL-FORTS

culture best.<sup>12</sup> Of the development of their art of fortification and the distribution of its products as shown on the map, fig. 9, our knowledge is at present fractional. Such as it is, it now requires to be reviewed.

### (b) *The known forts*

CHUN CASTLE in Cornwall is the site which has furnished Mr Leeds with the text for his theory of the Iron Age B invasion ; it is roughly circular, with outer and inner ditches and walls faced with polygonal blocks of granite. Within, the area was divided up into a ring of dry stone buildings round an open space. Though of great strength the fort is much smaller than its Spanish analogues, its diameter being about 280 ft. externally and 160 ft. internally. This fact, the peculiar wall-construction, and the plan of the defences and of the intricate entrance make it a distinctly individual type among the known works of its period, which include a large variety of types. The excavated examples do not in the least fully represent this variety, but they enable us at least to make a start.

Digging was done in 1902 at TREGEAR ROUNDS, St. Kew, which consists of two concentric ramparts of earthy rubble without retaining masonry, fronted by ditches : the outer encloses  $7\frac{1}{2}$ , the inner  $1\frac{3}{4}$  acres. An outwork guards the original entrance on the southeast through the outer rampart, which was proved by the association of pottery, etc., to belong to Iron Age B. The inner ring could not be exactly dated. Similar pottery was also found at CARN BREA in the excavations of 1895 ; however, these were mainly in the hut circles within the enclosure, which are apparently of more than one date, but the dry stone fortifications were probably added when the invaders of Iron Age B took over what may be supposed a previously occupied site. Partly double, they enclose some 10 acres, being rougher than but as massive as Chun, and formed at least in some places of big earth-fast upright blocks with smaller stones filling up the gaps between them. The megalithic tradition of the pre-Celtic inhabitants would seem to have been still exerting an influence in the Early Iron Age.

Equally typical sherds are known from the not dissimilar fort of TRENCROM.

In Devonshire, CRANBROOK CASTLE, on the eastern borders of Dartmoor, was explored in 1900, and hollows behind the main rampart

---

<sup>12</sup> The Glastonbury lake-village is of course the type-site for the pottery by which this culture can so well be recognized.



## ANTIQUITY

produced Iron Age B pottery and nothing earlier. Similar pottery was found two years ago at HIGH PEAK HILL, Sidmouth, where the fortifications may be coeval but have now mostly fallen into the sea. But the finest explored site in the county is HEMBURY FORT, near Honiton, now in course of excavation.<sup>13</sup>

The fort, which crowns a steep narrow spur 8 acres in extent, has a double and on three sides a triple line of rampart and ditch, and the internal area is divided by two transverse banks and ditches, of later construction than the main works. Both are attributable to Iron Age B, but beneath lie the traces of an earlier system of defence altogether. The bedding-trench and remains of a palisade have been found beneath each of the main ramparts, and there was previous timberwork on the site of the transverse banks also. It is clear that Hembury is revealing a sequence of plans and occupations of the greatest interest, especially in this little-known part of the country.

When we come to Somerset, there is rather more material to hand. The great stone ramparts of WORLEBURY above Weston-super-Mare long ago attracted attention—too long ago, indeed, for the excavations that followed to have come very near to modern standards. The main stone rampart and the sheer limestone cliff which does duty for it on the north enclose  $10\frac{1}{4}$  acres studded with pit-dwellings, in over 100 of which Early Iron Age remains have been found, and the fortress may be safely assigned to our Iron Age B. The main entrance is on the south, and outer lines of stone and earthwork, with ditches, cover the most assailable slope on the east.

More than twice the size of Worlebury is DOLEBURY on the Mendips ( $22\frac{1}{2}$  acres): here too the great main rampart is of stone, guarded by a ditch and a smaller outer rampart. No extensive digging has here been done, but enough has been found to enable Mr St. George Gray to ascribe it confidently to what we are calling Iron Age B.

The same explorer has established this result more definitely at CADBURY near Tickenham, an oval ( $6\frac{1}{4}$  acres) enclosed by two stone ramparts and ditches, and at CADBURY CASTLE in south Somerset, a much greater work (18 acres) with quadruple ramparts and ditches, penetrated by two strongly guarded entrances. At HAM HILL, some 10 miles further west, work is still in progress. Its defences, of irregular

---

<sup>13</sup> I am greatly indebted to the excavator, Miss Dorothy M. Liddell, for permission to include this notice of her work, and for much information concerning it, as well as the opportunity of examining pottery and objects found.

## HILL-FORTS

plan enclosing a huge maximum area of some 210 acres, are multiple, consisting principally of two big ramparts and a ditch between, with an extra rampart and ditch on the northeast and southwest. Despite the discovery of some little Iron Age A pottery, it is reasonably safe to ascribe the main works in their present form to the Iron Age B people, who are attested by satisfactory finds. Their pottery has also been found at CANNINGTON PARK CAMP, a small simple work near Bridgwater overlooking the Parrett. Lastly, KINGSDOWN CAMP, Mells, has been excavated and is being published this spring by Mr Gray :<sup>14</sup> its oldest structural feature is an irregularly cut inner ditch, dug apparently fairly late in Iron Age B to enclose about  $\frac{3}{8}$  acre, with an entrance on the south-southeast. A Roman occupation then ensued which produced a regular outer ditch, and a dry stone wall partly built over the silt of the old inner ditch. The exact purpose of this small enclosure is difficult to ascertain, but it may be provisionally classed here as being defensive.

The question of Iron Age B in Dorset is still doubtful. Our invaders from the west may have taken and remodelled Iron Age A works like Hambledon and perhaps Eggardun and Dudsbury. Possibly they were the original builders of Spettisbury and of BELBURY above Poole Harbour, but the supervening Belgic people of Iron Age C may also have had a hand, and definite evidence from excavation is so far sadly to seek. HOD HILL indeed was certainly an Iron Age C stronghold when taken by the Romans, but the pit-dwellings excavated by Boyd Dawkins yielded evidence of an immediately previous occupation characterized by contracted burials. These are usually taken to indicate Iron Age B, though at Solsbury Hill and Wallington, above mentioned, some have been found in a definitely Iron Age A context, and certainty is not yet fully established. Anyhow Dorset, where all three Iron Age phases would seem to be present and where hill-forts are extremely plentiful, offers a promising field for the present-day excavator. The most famous fortress in the county, Maiden Castle (plate 1), certainly displays a sequence of plans, and some of the few known scraps of surface pottery suggest Iron Age B, but no more than this can yet be affirmed.

Another promising field is the Cotswolds, which abound in unexcavated forts. The hoards of iron currency-bars, which are typical

---

<sup>14</sup> *Archaeologia*, LXXX. I am much indebted to Mr Gray's loan of the typescript of his paper prior to publication.

## ANTIQUITY

of Iron Age B culture, found in MEON HILL and SALMONSBURY camps point to the southwestern invaders, but their work has so far here only been certified at Leckhampton, where they refortified the Iron Age A fort already described with a coursed rubble wall in front of the old rampart, and deepened nearly half the width of the old shallow ditch (P, fig. 10). There is no Iron Age C here, and their pottery is unmistakable ; the entrance, which perhaps suggests a late date if not Roman influence, will be described below.

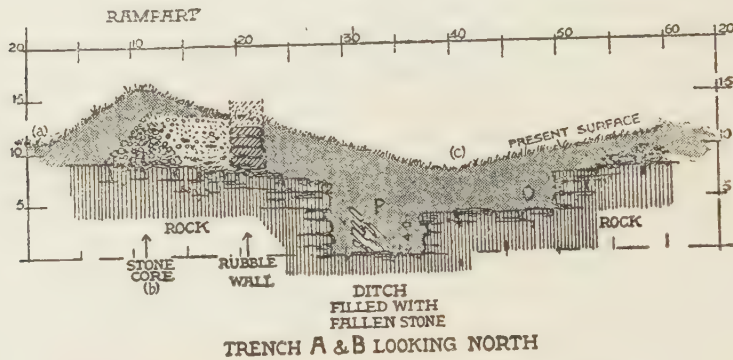


FIG. 10. LECKHAMPTON : CROSS-SECTION OF THE DEFENCES  
showing succession of Iron Age A and B work  
*By courtesy of Mr E. J. Burrow*

Following the obvious Jurassic zone northeast across the Midlands from the Cotswold country, the famous site of HUNSBURY near Northampton is reached ; and here too the Iron Age B people supervened upon their Hallstatt predecessors. The excavation, in the 19th century, was commercial and not scientific, and the authorship of the single big ditch representing the defences was not absolutely decided ; but the Iron Age B occupation, which was intensive, was certainly the main one, and made the place the most important centre of its culture in the Midlands.

A rather different case is that of CORLEY CAMP on the high ground near Coventry, a stone and earth fort some 200 yards square, explored in 1923 and 1926. Some worked flints were found and a little apparently pre-Roman pottery. The site must be Iron Age B, but occupation was



## HILL-FORTS

apparently slight and a late (1st century A.D.) date seems indicated. The main interest of the work is structural, and calls for special notice below.

The only other excavated evidence for the northward spread of Iron Age B hill-forts across England comes from the Malverns. Digging in 1924<sup>15</sup> at MIDSUMMER CAMP established here an Iron Age B date for the rubble-built main rampart, which encloses some 7 acres and has two entrances, and layers of paving were encountered in the ditch, apparently a unique feature, suggesting three successive occupations.

At the famous 'British Camp' on the HEREFORDSHIRE BEACON trial excavations in 1879 produced evidence that would seem to suggest occupation in Iron Age B as well as later, but a full exploration has yet to come.

There remain Wales and the Marches. In South Wales there is no satisfactory trace of true Iron Age culture before the Roman invasion except on the low hills and the coastal plain along the Severn Sea, which looks naturally towards Somerset. Here two definite Iron Age B forts have come to light: one is the original promontory-fort in LYDNEY Park more famous for its Roman temple, and the results of Dr R. E. M. Wheeler's recent work<sup>16</sup> indicate a date in the 1st or 2nd century B.C. The other is at LLANMELIN on the low hill just north of Caerwent, where Mr V. E. Nash-Williams<sup>17</sup> has begun excavation. It is a roughly elliptical enclosure of nearly  $5\frac{1}{2}$  acres defended by a multiple series of banks and ditches with a single narrow intrenched entrance: abutting on it is a smaller oblong annexe, probably a secondary feature. Regular occupation is estimated to have lasted from c. 200 B.C. until the Roman conquest, when the new town of Venta Silurum at Caerwent probably superseded it.

If the southwestern culture did not penetrate far into South Wales, miscellaneous finds certainly attest its presence in North Wales, which it must have reached by way of the Severn basin. No really satisfactory evidence, however, of pre-Roman hill-fort building and occupation is here known, though it is a reasonable presumption that some of the

---

<sup>15</sup> I am indebted to Mr J. W. Lucas, F.L.A., Librarian of the Malvern public library, for information and the loan of the typescript excavation-report by Mr I. T. Hughes preserved in his charge.

<sup>16</sup> I am indebted to him for much information and material from his forthcoming report.

<sup>17</sup> Who kindly provided me with a copy of his interim report in advance of its appearance in *Antiquaries Journ.*, XI, 70-71.

## ANTIQUITY

forts, occupied later in the Roman period, for instance Dinorben and Caer Drewyn, originated before it.

An exception, however, must be made of MOEL HIRADDUG in Flintshire, where the remains of a fine La Tène shield of about the 2nd century B.C. occurred in a position apparently showing that the fort, an imposing structure with a series of dry stone ramparts and ditches and incurved entrances, was in existence when it was lost.

The distribution of these known forts of Iron Age B, few as they still are, covers the country containing most of the finest yet unexplored in England and Wales. Till excavation has made further progress, it must suffice to notice the outstanding structural features it has so far revealed.

### (c) *Rampart and Entrance Construction*

Arriving as they did anything up to two centuries later than the Iron Age A people, the invaders of Iron Age B brought with them a more advanced technique of fortification, which they continued to elaborate right up to the Roman conquest, their intimate continental connexion no doubt keeping them in touch with the development of it which in Gaul followed the Cimbric-Teutonic invasion of just before 100 B.C. Multiple lines of defence with complicated outworks and entrance defences are frequent, and usually employed for contour-forts of varying form and often of large size and great strength. The geology of their territories usually demanded stone construction, though such ramparts are often now covered with turf. The polygonal masonry of Chun, which if connected with the forts in Spain may point to the Greek influence which there radiated from the colony of Emporiae, ranks higher than any of their other known work of the kind, but perhaps it, as well as such cruder building as at Carn Brea, points also to the influence of the immemorial native tradition of megalithic masonry. The average stone rampart, as at Cranbrook and Cadbury Castles and Leckhampton, consists of a rubble core faced with rough coursed masonry. Greater strength could be secured by multiplying this, and at Worlebury we have a splendid example of such multiple walling, as shown in fig. 11, with the additional advantage in the rearward member of a banquet or rampart-walk for the defenders. There is no evidence, as was once thought, that timber was also employed in these ramparts: since the Hembury palisades stand altogether apart, the only known case of this is at Corley, where the rampart was of earth faced with coursed masonry reinforced with lengthwise and crosswise timbering.





PLATE II



CORLEY CAMP: FOOT OF STONE RAMPART-FACING, WITH REMAINS OF LIMESTONE BUILDING  
Ph. Philip B. Chatwin

## HILL-FORTS

The remains of this construction, as will be seen from plate II, were found in a very ruined state, but they constitute the only approach yet recorded in England to the *muris Gallicis* of continental Celtic forts, where stout timber beams revet and interpenetrate a stone rampart.<sup>18</sup>

By contrast, the smaller Cadbury shows a piled stone rampart apparently sloped front and back without facing (see fig. 12), and un-strengthened earth and rubble work appears at Tregear Rounds and at Lydney, where successive tips could be detected in the make-up like those in the Iron Age works of the Wessex chalk, showing the piled-up surface soil at the bottom and the stouter material dug from deeper in the ditch above.

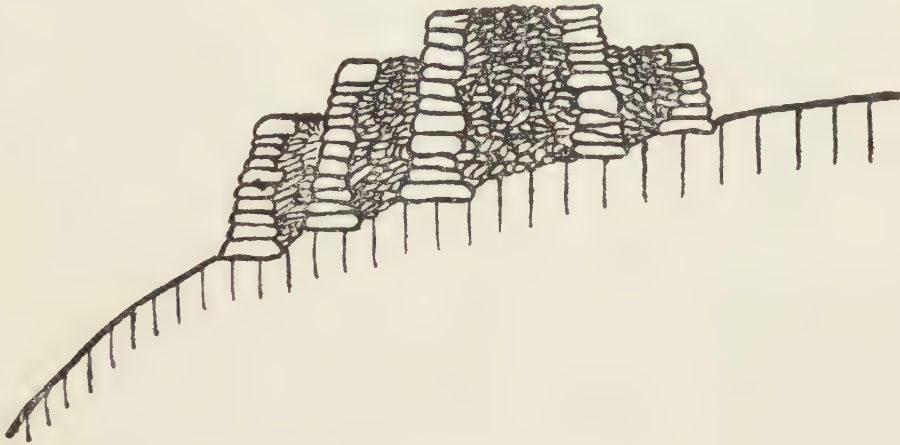


FIG. 11. WORLEBURY: sketch of the multiple stone rampart

The guarded entrance is liable to appear in quite an advanced form from the first. The gateways through the two ramparts at Chun are so placed as to necessitate a double turn between them, and the inner is flanked by inturned rampart-ends. Cranbrook Castle has two entrances of the gently incurved type, and the same plan on a more imposing scale appears at Worlebury. At Dolebury the actual entrance through the huge main works is of the simple type, and is accordingly illustrated under A in fig. 7, no. 10, but it is guarded by strong outworks enforcing an inclined approach up a natural gully, the full extent of which cannot be seen on this small plan. In fact, nearly every possible variety of

<sup>18</sup> Described by Caesar at Avaricum, *B.G.* VII, 23 ; Déchelette, *Manuel*, IV, p. 491 ff.

## ANTIQUITY

entrance must be exemplified by the Iron Age B forts; the more elaborate may be suspected to be of late date in the series, contemporary with Iron Age C in southeastern Britain and of the La Tène III period, to which at the earliest all the examples grouped as 'later' in fig. 7 belong, to whatever group any one may be assigned. The gently incurved (no. 5) and the sharply inturned (no. 6) entrances at Hod Hill and Hambledon (no. 9), with their protecting outworks, may possibly, as explained, be Iron Age B work.<sup>19</sup> As well as the inturned type, also exemplified at Llanmelin, Ham Hill, and Hembury, both Hembury and Cadbury Castle have inclined approaches penetrating all the successive lines of rampart at a slant, and the two ends of the southern transverse bank of Hembury which flank the passage through it overlap to form an s-shaped entrance into the southern half of the fortress. Traces of post-holes belonging to a gate or barrier were here found.

A curved approach through multiple defensive lines is well exemplified at the smaller Cadbury (fig. 12), where the two ramparts diverge on the east of the northern entrance to enclose between their ends the passage way as it curves round those opposite, forming a double bottle-neck open to enfilade all round. The plan shows the position of the excavator's cuttings; no post-holes were found, but timber defences may still remain to be explored here as in similar entrances elsewhere.

Lastly, the special case of Leckhampton must be noticed. As seen in fig. 13 the passage (10-12 ft. wide) was flanked by semicircular projecting bastions, consisting apparently of great mounds enclosed by the rubble facing-wall described above as Iron Age B work (p. 82). At H and J were two guardrooms flanking the passage, of one build with the bastions, and at K beyond on the north was an additional chamber.<sup>20</sup> Post-holes and indeed anything to suggest provision for gates or barriers were absent. The remarkable guardrooms are features already known in Iron Age A at St. Catharine's Hill period A (p. 74 and fig. 8), but appear here in an improved form. Though this may owe something to Roman influence, the work is undoubtedly a pre-conquest one of Iron Age B, which is thus seen fully to anticipate the extreme developments of entrance fortification to be seen in the Welsh hill-forts of the Roman period (see p. 94).

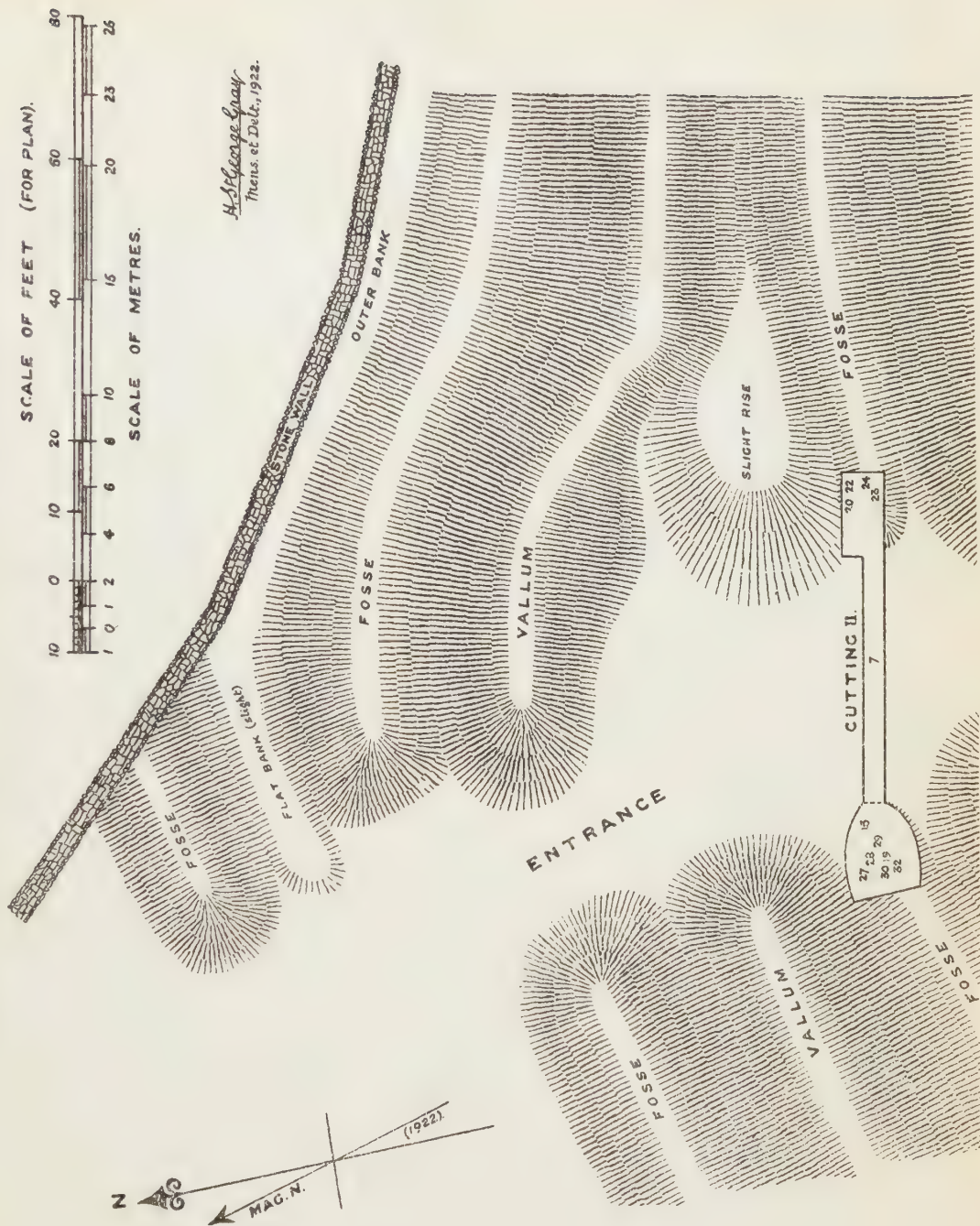
---

<sup>19</sup> Cf. pp. 68, 81, 92.

<sup>20</sup> M N indicate intrusive walls of a much later date.



PLAN OF THE NORTHERN ENTRANCE OF CADBURY CAMP, NEAR CLEVEDON,  
SHOWING THE POSITION OF THE TRIAL-EXCAVATIONS MADE IN 1922.



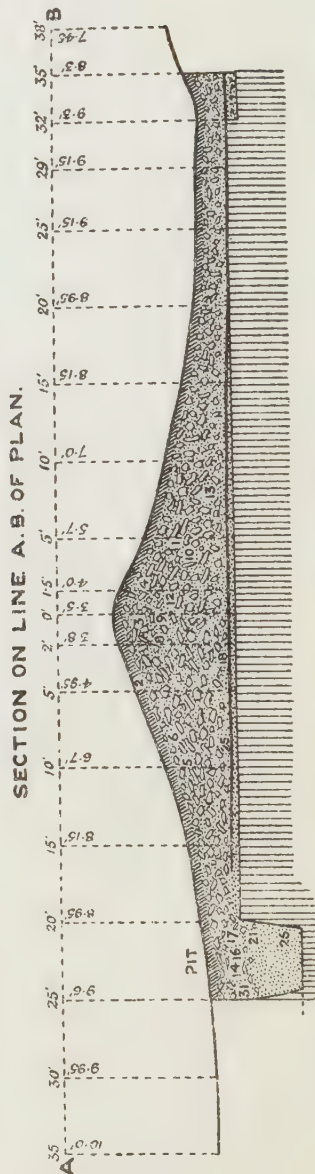
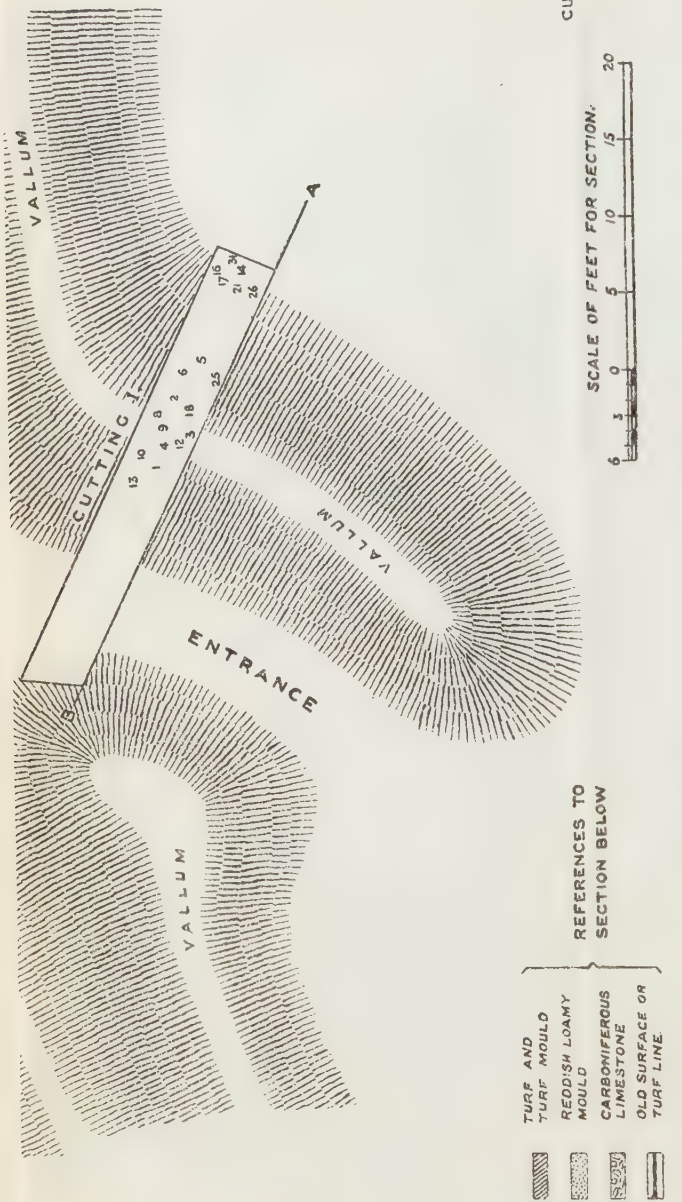


FIG. 12. CADBURY, TICKENHAM, SOMERSET: PLAN OF THE NORTHERN ENTRANCE AND CROSS-SECTION OF THE MAIN RAMPART  
By courtesy of the Somerset Natural History and Archaeological Society

## HILL-FORTS

### (d) *The Northern Immigration*

In the 3rd century B.C. immigrants from Gaul appear in eastern Yorkshire and as far south as the Cambridge region. Their culture is parallel to that of our southwestern invaders, with whom their territories were linked by the Jurassic zone across the Midlands. However, hardly any hill-forts can be ascribed to them: in Yorkshire and Lincolnshire there are not many recorded at all. It seems indeed as if the Late Bronze Age people previously in occupation had already begun fort-building, at least on the Cleveland moors, for the promontory fort of ESTON NAB, recently explored by Mr F. Elgee,<sup>21</sup> seems most probably to be their work, and there are many similar sites.

If so, the initial generalization of this article is yet not seriously upset, for some of the Eston Nab pottery resembles that from the contemporary Heathery Burn cave, where the bronze objects, in common with many from the north as well as the south of England, suggest immigration forming part of those Late Bronze Age movements which have been seen to have shortly preceded and even been partly overlapped by those of Iron Age A; and further, the latter movements themselves reached as far north as Scarborough, and must have influenced the persisting Bronze Age populations.

Though the progress of Iron Age culture and its art of fortification is still very obscure in the north, the Iron Age B invaders seem to have effected a widespread gradual infusion and hill-fort building evidently went with them or their influence, for there are Scottish forts which date from before the Roman invasion, like Burnswark in Dumfriesshire, which was assailed by the Romans, very probably by Agricola, and has an incurved and protected southern entrance illustrated on fig. 7, no. 11. But the best evidence of fortification in Scotland comes from the period during and after the Roman invasions, and the chronology of its earlier beginnings is not as yet fully worked out.<sup>22</sup>

In the north of England the result of the Iron Age B infusion appears at the Roman invasion as the confederacy of the Brigantes, whose forts are referred to by Juvenal. One of these, WINCOBANK CAMP near Sheffield, has been excavated: it yielded no traces of habitation, and has two concentric ramparts consisting of an earth

---

<sup>21</sup> Elgee, *Early Man in N.E. Yorkshire*, 1930, 152 ff. Detailed report of the excavations forthcoming.

<sup>22</sup> I have not presumed to include any Scottish forts in the lists or maps here appended.



## ANTIQUITY

bank covering a wall of dry masonry with carefully-built facing and charred rubble core, and enclosing  $2\frac{1}{2}$  acres. As a little Roman pottery was found very near the bottom of the ditch, it cannot long antedate the Roman conquest, and may be ascribed to the wars of the 1st century A.D.

### (e) *Conclusions*

Though fort-building may have anticipated the Iron Age B immigration in the north, its spread there may certainly be mainly connected therewith. However, tribal organization here before the coming of the Romans does not seem to have advanced far enough to promote a great deal of such work.

The case is otherwise in the southwest and west, where the invaders from the 4th century B.C. onwards produced a multitude of hill-forts, culminating in the greatest and most complex works known.

Their number and strength, whether, as almost always, permanently inhabited, or like perhaps Corley and in the north Wincobank, rather 'camps of refuge', would seem to point to an organized state of tribal society, in which warfare, though no doubt intermittent as ever, played a larger part than in Iron Age A. Whether this was due merely to inter-tribal strife or to the necessity for repression of the natives by the Celtic invaders is doubtful, but the latter must after a time have ceased to operate, for the people certainly became largely a homogeneous blend with a strongly persistent pre-Celtic strain.

It is conceivable that some late Iron Age B works were put up to resist attack by the invaders who followed.

## IRON AGE C

### (a) *The two Belgic invasions*

Iron Age A in most of southeastern Britain was at last ended by an invasion of Belgic tribes from northern Gaul, who appeared in Kent about 75 B.C. and had penetrated well to the north of the Thames by the time of Caesar's expeditions twenty years later. They subsequently overran Essex, and their maximum extent in the early 1st century A.D. reached to the Fens and into Northamptonshire on the north and possibly to the Cherwell valley on the east.<sup>23</sup>

---

<sup>23</sup> Their typical pottery is the pedestalled ware of the Aylesford and Swarling cemeteries, whereas the second invasion is characterized rather by bead-rim vessels.







## HILL-FORTS

Later, after Caesar's conquest of Gaul, a second Belgic invasion of refugees from the Roman power took place further west, and spread from the Hampshire harbours into Hants, Berks, and Wilts, and probably west Sussex, with subsequent extensions into Dorset and some part of Somerset.

But for sequestered districts like north Berks, the only Iron Age area left untouched seems to be east Sussex, where the chief hill-fort, the Caburn, was re-fortified at this time and given the outer rampart and the complex entrance defences shown in fig. 7, no. 8, built in a style like that of Iron Age B. The contemporary culture of the inhabitants, however, is still that of Iron Age A, strongly influenced but not superseded by those of its more advanced neighbours. The outer rings at Saxonbury and Thundersbarrow are likely to be coeval.

The Belgic invaders were of mixed Celtic and German stock, and had inherited other traditions than the Celtic ones of hill-fort building and upland settlement. There is reason to believe that they found woodland and valley settlements at least equally congenial, and their idea of an *oppidum* as a forest stronghold fortified for war-time refuge has been recorded by Caesar.<sup>24</sup>

The whereabouts of his adversary Cassivellaunus' *oppidum* is still an open question, but it seems clear that the hill-fort did not play the same part in the life of Belgae as in that of their predecessors. This will be clear from the distribution-map (fig. 14) which shows that almost the only hill-forts occupied by them lie on the frontiers of their territory, where fighting was no doubt continual. A few of these were earlier works taken over, but a number were new, and of the Iron Age A forts anyhow most were now abandoned. It has been plausibly contended that the Trundle was superseded by a new city at Chichester on the plain below. Indirectly if not directly Winchester now likewise took the place of St. Catharine's Hill.

The capital of the paramount western Belgic dynasty, that of Commius the Atrebate at Silchester, was indeed strictly speaking a plateau fortification, but though some uncertainty surrounds its earthworks, it cannot really be called a hill-fort, but rather an extensive defended city; and whatever the date of the Lexden earthworks outside the southeastern capital, that of Cunobeline by Colchester, no more can be true there.

---

<sup>24</sup> *B.G.*, v, 21, 1.

## ANTIQUITY

### (b) *The known forts and their defences*

To pass to detail, the chief non-frontier fort is BIGBURY near Canterbury, which has the distinction of having been assaulted by Caesar.<sup>25</sup> It is a contour-fort overlooking the Stour whose single rampart and ditch enclose some 25 acres with an annexe (8 acres) on the north, with two original entrances, through which runs the Pilgrim's Way, doubtless in contemporary use.

Much material unearthed in gravel-digging, including typical Iron Age c pottery and ironwork and tools of all kinds, illustrates the people's domestic and agricultural life. This Kentish hill-city was evidently deserted some time in the 1st century A.D. in favour of Canterbury, which became the Roman centre, but whether this happened after the Roman conquest or, as at the Trundle and Chichester, before it, is not certain.

In the Cambridge region, Willbury, Arbury Banks, and Wandlebury and War Ditches seem to have been taken over and perhaps re-fortified, and a new hill-fort appears: CAESAR'S CAMP near Sandy, a commanding contour-work above the Ivel, now too much damaged for certainty about its original extent.

Not far to the west lies DANESBOROUGH CAMP, another contour-fort (8½ acres) with a single rampart and ditch and one simple entrance certified by excavation, which dated the occupation beyond doubt. Less success has attended work at BULSTRODE, further southwest along the Chilterns: it is a big double-ramparted fort of 21 acres which certainly suggests a late date, but the scanty pottery found is indefinite and perhaps work of both Iron Age A and C is present.

The other known forts of Iron Age c all belong to the western Belgic area, and cluster along the downs of Berks and Wilts in a line, running down to the Dorset coast, that cannot be anything but the frontier where, for a time at least, they marched with their western enemies. Away from this belt, they have at present not a hill-fort to their name.

Silchester has already been excluded from our classification, but the big defended settlement of CASTERLEY in Wilts has still something of the hill-fort character, though its 68 acres, surrounded by a rather feeble single rampart and ditch and full of internal partition-works, ally it rather to the same town type, and it seems to mark a stage in the Belgic abandonment of the true hill-fort idea.

---

<sup>25</sup> B.G., v, 9, 4 ff.

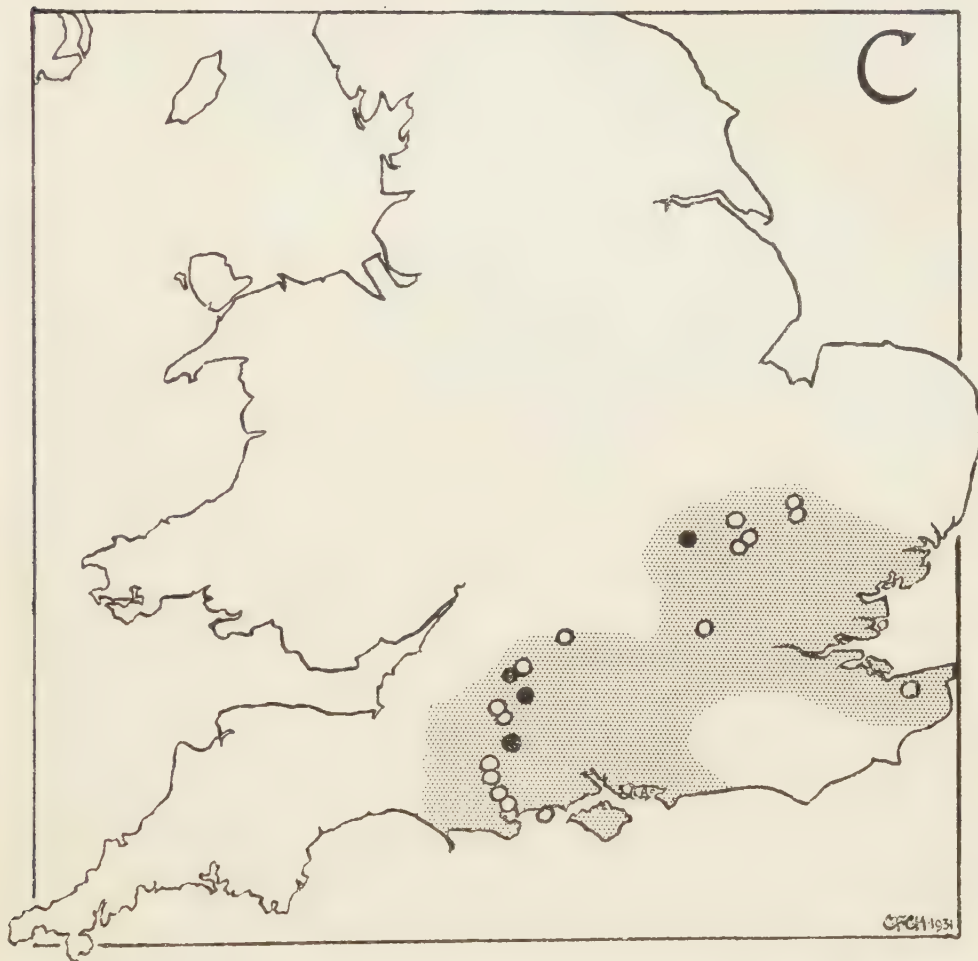


FIG. 14. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD C

A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as assumed from known material



## ANTIQUITY

Of its three entrances the southern is shown in fig. 7 no. 7, to be of the simple type: it contained four pits which seem to have held a timber gate-structure, but the curved shape of one of them, as much as 15 ft. long, presents an unsolved problem. A similar simple entrance occurs at OLIVER'S CAMP near Devizes, with four pits which are all intelligible as gate-post holes, though here too there is some doubt about two adjacent smaller holes (fig. 7, no. 4). This is a true hill-fort of the promontory class, enclosing 3 acres.

A larger but similar promontory-fort is WINKELBURY in south Wilts, which has internal partition-works and a big outer rampart and ditch which Pitt-Rivers' excavations dated to Iron Age c, though the site was that of an undefended Iron Age A settlement, as was also the case at Casterley, Oliver's Camp, and perhaps also at OLDBURY, a round contour-fort of 9 acres near Cherhill. Alfred's Castle on the Berkshire Downs has produced Iron Age c as well as earlier pottery,<sup>26</sup> but to which phase its defences should be assigned is still doubtful.

Along with Winkelbury, the strongest known Iron Age c work in Wilts is BATTLESBURY, where however the defences have not been dated by digging, but are of a complex type suggesting this period, which was that indicated by the main yield of the pit-dwellings within. Southeast of it across the Wylye is HANGING LANGFORD CAMP, which has produced contemporary material, but from the air at least suggests problems which excavation has yet fully to solve, and there are probably others near by at Bilbury Rings and Stockton Earthworks.

But the Battlesbury defences have better analogies further south along the frontier line in Dorset, where the final occupations of Hod Hill, Hambledon Hill, Spettisbury and Belbury at least must belong to Iron Age c, though the earthworks of these too have not been properly dated, and the significant finds come from their internal area; thus the Hod and Hambledon entrances noticed above (fig. 7, nos. 5 and 9) are still of uncertain attribution.<sup>27</sup>

In general, there seems to be no special peculiarity in fortification technique that distinguishes the Belgae of Iron Age c. They evidently were capable of producing ambitious works if they wanted them, but very often they were content with quite simple defences no better than those of the feebler Iron Age A forts.

---

<sup>26</sup> Kindly shown me by Mr Stuart Piggott.

<sup>27</sup> Cf. p. 81.

## HILL-FORTS

### (c) *Conclusions*

Iron Age c witnessed the concentration of political power in the hands of ever fewer British chiefs—finally Cunobeline became paramount over all the south and the southeast. It is natural then, that this period should mark the decline of the hill-fort, the whole idea of which was the setting-up of a fortified centre of tribal life by every little autonomous group at some capital point of its block of usually upland territory.

Politically, the hill-fort, as seen in Iron Age A and B, was the Celtic version of the earlier Greek *πόλις*. The Belgae, in unifying the tribal groups over ever larger areas, took the place in British history of the Hellenistic monarchs, and like them prepared the way for Rome.

The Belgic invasions thus effected a marked discontinuity in tribal life; the old hill-forts were most often deserted, to come, like Cissbury, under the plough. Many open villages of Iron Age A were likewise abandoned, and while some, like Worthy Down, continued, new habitations began to appear on woodland and valley sites. The new cities, where they are known, may be fortified but cannot usually be called hill-forts—the hill-fort is serving its purpose now practically only on the frontiers of the lands the invaders had seized.

The forts of the Cambridge region, for instance, lie just within the belt running across Newmarket Heath where their pottery and coin-distributions would seem to delimit them from the Icenii. And if any forts are discovered to be their work away from such frontier lines, they will very possibly recall temporary frontiers preceding the attainment of their maximum of expansion—*e.g.* Wallbury in Essex should be just about on the boundary between the Belgic Catuvellauni and their enemies the Trinobantes of Essex in the time of Caesar. For the rest, the big British kingdoms of the century following cannot have been formed, even were they maintained, without fighting—Caesar records four kings in Kent, and Bigbury was evidently the stronghold of one of them.

The crop of suspected forts of this age in Dorset agrees with pottery and coin-evidence in suggesting that the Belgic penetration there was effectively retarded, and the line thence northward across the Wiltshire downs faces west towards Somerset, where the Celts of Iron Age B are believed to have been suffering Belgic invasion in the years just before the Roman conquest.

## ANTIQUITY

### BRITAIN AND THE ROMAN PEACE

The Belgae of the southeast fought hard but soon went down before the Romans, and the next stage of the conquest of which we hear is in the southwest, where Vespasian with the 11th Legion had to set himself to take more than twenty hill-forts by storm.<sup>28</sup> These were no doubt mainly in Wilts and Dorset, and one of them was certainly Hod Hill, where a Roman camp was entrenched in a corner of the old fort.

But the real military problem for Rome lay in the highlands of the west and north, where the Iron Age B hill-fort tradition was effectively alive. In fact, it is only in the Roman invasions that northern fortresses like Traprain Law seem to have been seriously established, and they lasted some hundreds of years after the withdrawal of the Roman power from Scotland.

In Wales the story is rather different. Before A.D. 80 Frontinus and Agricola had stamped resistance out, and forty years later most of the garrisons were sent away for service on the northern *limes*. It is significantly not long after this that native hill-fort building, in North Wales at least, received a great impulse. Dinorben, Tre'r Ceiri, Pen-y-Cordynn, and a number of others have had the successive occupations of their massive defences dated to the middle and later Roman period. Dr Willoughby Gardner has fully described the character of these in a most notable paper,<sup>29</sup> and it is clear that they embody the great tradition of Iron Age B fort-building.

The northeast Y-Cordynn entrance (fig. 7, no. 12) is an extreme development of the old inturned type, with rectangular guard-house bays which, while they suggest imitation of a Roman gate-plan, recall the guard-houses of St. Catharine's Hill and Leckhampton.

The prominence of these Welsh hill-forts during the Roman dominion has been accounted for by Dr Wheeler<sup>30</sup> by the theory that their occupants, so far from being evicted by the government, were created a native militia to hold their own citadels for the Empire against the oversea raider.

This stroke of frontier policy sets Wales in sharp contrast to the rest of the province, where the abandonment of the old tribal hill-forts,

---

<sup>28</sup> Suetonius, *Vespasian*, 4: 'superque viginti oppida'.

<sup>29</sup> *Arch. Camb.*, Dec. 1926, 221.

<sup>30</sup> *Roman and Native in Wales*, Cymmrodorion Soc., 1920-1, 40.



## HILL-FORTS

already begun in the Belgic period in the south, was practically universal by the end of the 1st century A.D., and Romano-British cantonal towns like Canterbury, Winchester, Wroxeter, and Caerwent were made the centres of the local government units into which the tribes were turned.

But the troubled years of the shrinkage of the Roman power inevitably brought some reversion to the conditions of barbarian life that had preceded its establishment. While indeed the Welsh forts were deserted by the 6th century at the latest, England did not settle down as an Anglo-Saxon country all at once.

Groups of the old provincials protected their settlements by dykes, and two cases at least are known where pre-Roman hill-forts were brought once more into commission, and their defences strengthened to shelter remnants of the Romano-British against their many foes. This happened, it seems, in the 4th century A.D. at Cissbury, and at Lydney in the 5th. The Dark Ages were in many ways the Early Iron Age restored.

Thereafter, though some medieval castles and their attached towns may, like Old Sarum and possibly Edinburgh, have come to stand within old prehistoric defences, the hill-fort phase of history, as we may call it, came in this island to an end.

### APPENDIX

#### LIST OF HILL-FORTS PROVIDING EVIDENCE OF EARLY IRON AGE DATE

In this list, the letters A, B, and C stand for the three phases of the Early Iron Age, and follow each fort according to its assignation, in brackets if this is not based on excavation in the actual defences. The literary references are the most accessible in each case, save that the Victoria County History (*V.C.H.*), and the Earthworks Committee's Reports (*E.C.R.*), are not referred to unless the only or most convenient authority.

BEDFORDSHIRE. Caesar's Camp (c), Fox, *Cambridge Region*, 109, 134, 139.

BERKSHIRE. Alfred's Castle (A, c), unpublished. Cherbury Camp (A), *E.C.R.* 1927, 17, 22. Uffington Castle, A, *St. Catharine's Hill*, 38, 68, 69; Alice Martin-Atkins, *Kingston Lisle* (1904). Wittenham Clumps (A), unpublished.

BUCKINGHAMSHIRE. Bulstrode (A, c), *Rec. Bucks*, xi, 283. Danesborough, c, *Rec. Bucks*, xi, 363.

CAMBRIDGESHIRE. Wandlebury (A, c) and War Ditches, A, c, Fox, *Cambridge Region*, 109, 114, 134, 136, 139.

## ANTIQUITY

- CORNWALL. Chun, B, *Arch.* LXXVI, 205. Carn Brea (B), *Jour. Roy. Inst. Cornwall*, XIII, 92. Tregear Rounds, B, *ibid.* XVI, 73. Trencrom (B), *Trans. Penzance N.H. and A.S.* 1883, 198; 1893-8, 109.
- DEVON. Cranbrook Castle (B), *Trans. Devon Ass.* XXXIII, 131. Hembury, B, report by Miss D. M. Liddell forthcoming. High Peak Hill (B), Radford, *Our Prehistoric Camps*, I.
- DORSET. Belbury (B,C), *Archaeologia*, XLVIII, 117. Dudsbury, A (?B,?C), unpublished. Eggardon (A,?B), *Proc. Dorset Field Club*, XXII, 28. Hambledon A (?B,?C), *Wessex from the Air*, 44. Hod Hill (B,C), *ibid.*, 36. Spettisbury (?A, B, C), *Proc. Soc. Ant.* 1st ser. IV, 188; *Brit. Mus. Iron Age Guide*, 134-5.
- ESSEX. Ambresbury Banks, A, *Trans. Essex Field Club*, II, 55. Loughton, A, *ibid.* III 212; *Essex Naturalist*, XXII, 117.
- FLINT. Moel Hiraddug (B), *Arch. Camb.* Dec. 1928, 253.
- GLOUCESTERSHIRE. Leckhampton, A, B, *Trans. Bristol and Gloucs. A. S.* XLVII, 81, Lydney, B and post-Roman, report by Dr R. E. M. Wheeler forthcoming. Meon Hill (B) and Salmonsbury (B), *Proc. Soc. Ant.* XX, 183.
- HAMPSHIRE. Butser Hill (A), *Antiquity*, IV, 194. Hengistbury (A, B, C), *Report* (Soc. Ant. 1915), esp. p. 11. St. Catharine's Hill, A, *Proc. Hants Field Club*, XI. Oliver's Battery, Alresford (A), *ibid.* 4, 164.
- HEREFORDSHIRE. 'British Camp', Herefordshire Beacon (B), *Journ. Roy. Anthropol. Inst.* X, 323. Midsummer Camp, B, *ibid.* 319, and unpublished.
- HERTFORDSHIRE. Arbury Banks (A, C), Fox, *Cambridge Region*, 109, 135, 139. Willbury (A, C), unpublished.
- KENT. Bigbury (C), Jessup, *Arch. of Kent*, 144, 257.
- MONMOUTH. Llanmelin, B, *Ant. Journ.* XI, 70 (interim report by Mr V. E. Nash-Williams).
- NORTHAMPTONSHIRE. Hunsbury (B), *V.C.H. Northants*, I, 147.
- OXFORDSHIRE. Chastleton, A, report by Mr E. T. Leeds forthcoming.
- SOMERSET. Cadbury Castle, B, *Proc. Som. A. S.* LIX, 1. Cadbury, Tickenham, B, *ibid.* LXVIII, 3. Cannington Park (B), *ibid.* LIX, 12. Dolebury, B, *ibid.* LXIV, xliii; LXVIII, lxii. Ham Hill (A?), B, excavation by Mr H. St. George Gray proceeding; interim notices *ibid.* LVIII, LXVII, LXX, LXXI. Kingsdown, B, *Arch.* LXXX (forthcoming). Solsbury Hill, A, *Antiquary*, XLV, 326, 419, 451. Worlebury, B, Dymond and Tomkins, *Worlebury*.
- SURREY. Wallington, A, *Journ. Roy. Anthropol. Inst.* N.S. VIII, 387.
- SUSSEX. Beacon Hill Camp, Harting, (A), Curwen, *Prehistoric Sussex*, 72. Caburn, A, *Arch.* XLVI, 452; *Suss. Arch. Coll.* LXVIII, 1. Cissbury, A and late Roman, *Ant. Journ.* XI, 14. Hollingbury (A), *Brighton and Hove Archaeologist*, I, 18. Saxonbury, A, *Suss. Arch. Coll.* LXXI, 223. Thundersbarrow (A), *ibid.* 258. The Trundle, A, *ibid.* LXX, 33, and forthcoming further report by Dr E. Cecil Curwen. Wolstonbury, A, *ibid.* LXXI, 237.

## HILL-FORTS

WARWICK. Corley, B, *Trans. Birmingham A. S.* LII, ii, 282.

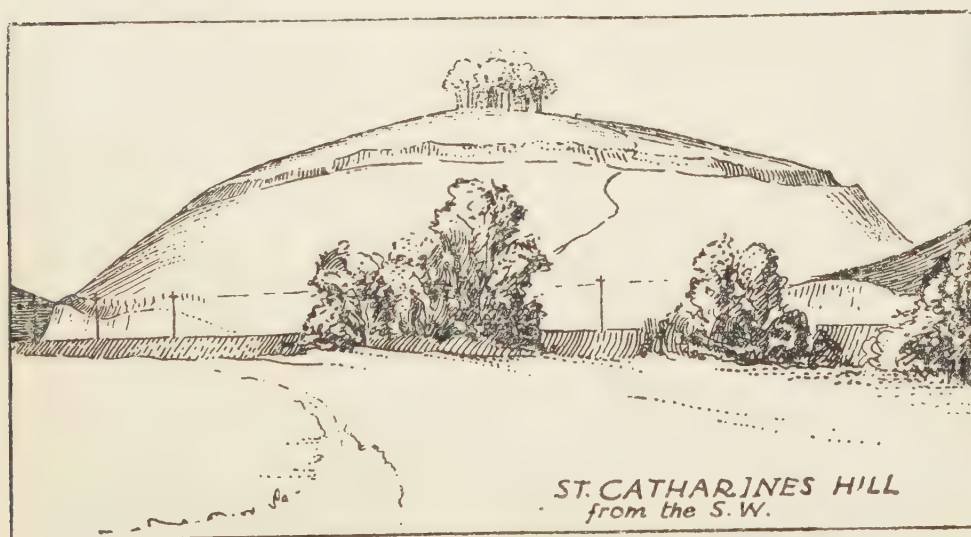
WILTSHIRE. Battlesbury (c), *Wilts Arch. Mag.* XLII, 368. Casterley, c, *ibid.* XXXVIII, 53. Figsbury, A, *ibid.* XLIII, 48; *Wessex from the Air*, 84. Hanging Langford (c), *ibid.* 116. Lidbury, A, *Wilts Arch. Mag.* XL, 12. Liddington Castle, A, *ibid.* XXXVIII, 576. Oldbury (c), *Devizes Mus., Cat.*, 95. Oliver's Camp, c, *Wilts. Arch. Mag.* XXXV, 408. Winkelbury, c, Pitt-Rivers, *Excavations*, II, 233; *St. Catharine's Hill*, 78, 166.

YORKSHIRE. Wincobank, B, *V.C.H. Yorks*, II, 8.

The total number of hill-forts in this list and the three distribution-maps is 69. The defences of 37 have been definitely dated to at least one phase of the Early Iron Age.

### Note on Literature

There is no authoritative general work on Iron Age hill-forts. The best brief introduction is *Wessex from the Air*, p. 8. In *St. Catharine's Hill* I have attempted a summary, with special reference to Iron Age A. For Iron Age C see *The Belgae in Gaul and Britain* in *Arch. Journ.* LXXXVII (forthcoming). Iron Age B in the southwestern counties has been summarized by Radford, *Our Prehistoric Camps* (Devon Archaeological Exploration Society, 1930). The best detailed works other than actual excavation reports deal with particular districts, pre-eminently Dr Williams-Freeman's *Field Archaeology as illustrated by Hampshire*, Dr Cyril Fox's *Archaeology of the Cambridge Region*, Dr Cecil Curwen's *Prehistoric Sussex*, and Mr Heywood Sumner's *Cranborne Chase and New Forest*. The evidence is being further summarized by counties in the series of County Archaeologies edited by Mr T. D. Kendrick.





## Notes and News

### LEAC CON MIC RUIS, co. SLIGO

This notable megalithic monument is in the Deer Park, four miles to the east of the town of Sligo, on the summit of an isolated limestone ridge and between 400 and 500 feet above sea level.

Six miles away to the southwest is the wonderful Carrowmore assemblage of dolmens enclosed by circles, consisting even now of 85 such monuments in an oval area of less than a mile and a quarter by half a mile, while many more are known to have disappeared. This group and indeed the whole district is dominated by the great cairn on the summit of Knocknarea, 600 feet in circumference and over 30 feet high.

Leac Con Mic Ruis lies approximately east and west and consists of an oval central area contained by upright stones averaging 4 feet in height and approached by a passage way on the south. At the west end is a 'trilithon' portal leading to an antechamber and chamber; at the opposite end is a pair of chambers approached in the same way through separate portals and antechambers. Surrounding the monument is a mound, now remaining as a fairly level platform extending about 10 feet beyond the main uprights, and then sloping down to the original ground level.

Excavation has produced unburnt human and animal bones and shells and it may safely be assumed that the monument is sepulchral.

A plan of a monument at Ballyglass, co. Mayo, is published by W. C. Borlase in his *Dolmens of Ireland* resembling, but apparently smaller than, Leac Con Mic Ruis. Here is another oval, apparently approached by a passage and having a chamber and antechamber at either end, and a third opposite the passage.

Leac Con Mic Ruis has been the subject of much speculation. A plan, description and references are given by Borlase, and the excuse for publishing a fresh plan is that the encircling mound has not previously been satisfactorily recorded. It has been made by Mr Stuart Piggott from the one already published, supplemented from notes by the writer. The dotted lines suggest the former outlines of the entrance

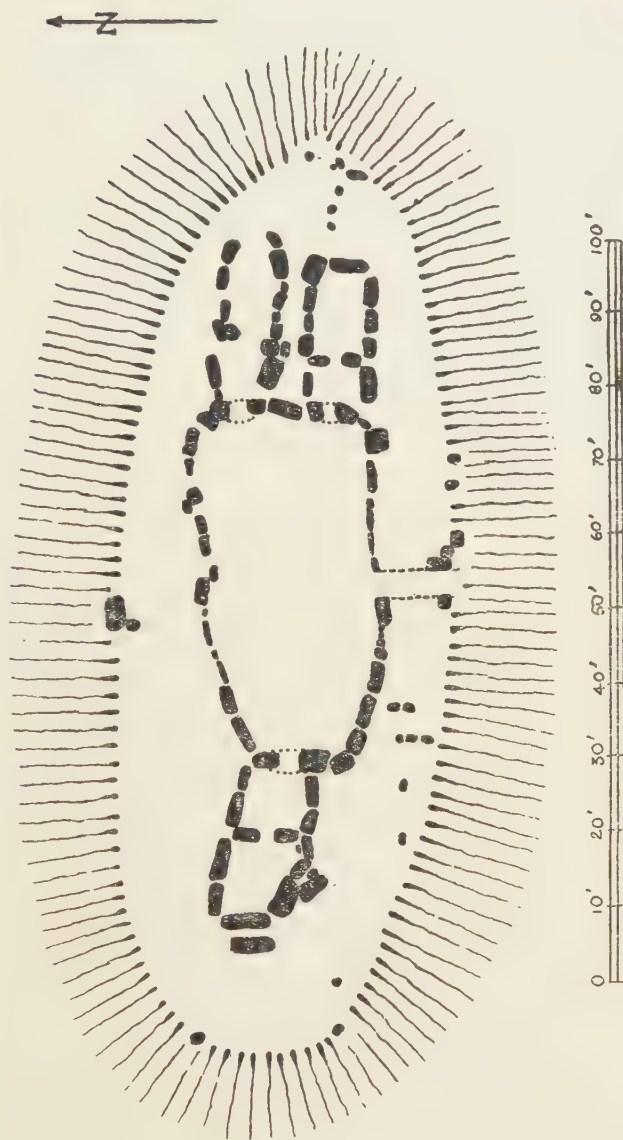


PLATE I



LEAC CON MIC RUIS, FROM THE SOUTH  
*Ph. W. J. Hemp*



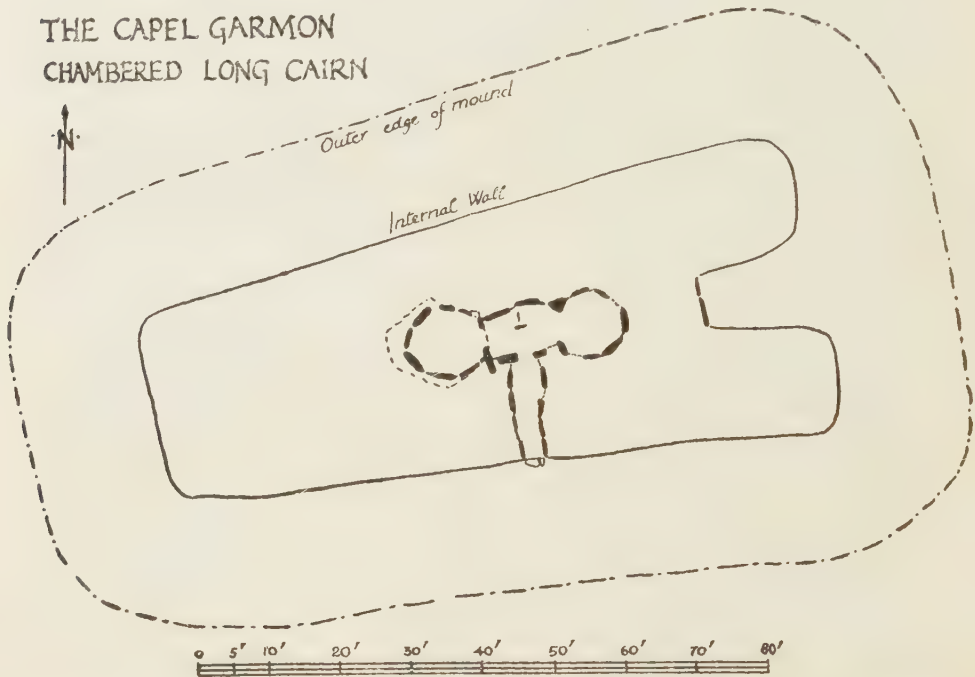


SKETCH PLAN of MEGALITHIC STRUCTURE  
of LEAC CON MIC RUIS, Co. SLIGO.

## ANTIQUITY

passage and the few upright stones which still stand along the crest of the mound probably represent an encircling wall. The existence of the passage is almost a certainty; of the wall it can only be said that while it is extremely probable that it did exist, the question can only be settled by excavation.

Other structural features present greater difficulties. To what extent was the monument covered by its mound? The internal area is very large, and, although the chambers at either end and the



entrance could easily have been spanned by corbelling or roofed by slabs—one cover stone still remains—the great central space 50 feet long could scarcely have been so treated.

The monument stands on the bare moorland and although there are a few stone walls and old banks in its neighbourhood, there is nothing to suggest the removal of the vast cairn which would normally have covered such a megalithic monument. The surrounding mound is evenly disposed and in no way resembles a spoil heap. It seems likely then that the central area was merely filled with stones or, less

## NOTES AND NEWS

probably, was left open, and the chambers and passage roofed and covered by the encircling mound. The same problem is presented by the monument on Mull Hill in the Isle of Man, where there is a curious arrangement of pairs of cists ranged in a circle round a central area, each pair having a passage. Here also the cists were presumably hidden in an encircling mound which still exists in part.

Were not speculation such a dangerous luxury in dealing with these complicated problems of megalithic plans it would be tempting to suggest that the Ballyglass monument might represent a transition from the Deer Park type to that of Mull Hill. Despite the danger, however, one purpose of these notes is to put forth the suggestion that Leac Con Mic Ruis represents a 'degenerate' long barrow, a step farther removed from the primitive form than the Denbighshire cairn at Capel Garmon. The same elements occur in both monuments; chambers opening from a central area which is approached by a passage and the whole surrounded by a ceremonial wall, which at Capel Garmon was buried in the cairn which completely covered the monument. There however the wall is interrupted by a false entrance, which is not now represented in the Irish monument—unless it be buried in the mound.

Another abnormal long barrow was examined by Professor Macalister and others on Carrowkeel mountain, also in Sligo. There the design bore little resemblance to that of Leac Con Mic Ruis, but its existence proves that the knowledge of the long barrow type of grave was to be found among the inhabitants of Sligo in the second millennium B.C.

W. J. HEMP.

## THE GOODWIN SANDS

About four miles southeast of Ramsgate in the Isle of Thanet, the Straits of Dover are occupied by an area of shifting sand. At low water these sands are exposed to a height of between four and seven feet. They are then, at any rate in places, firm and hard, and it is possible to land and walk about on them. Since 1590, and probably before then, they have been called the Goodwin Sands, and two legends have been related of them.

The first legend is recorded by John Twine,<sup>1</sup> whose Latin may

---

<sup>1</sup> Joannis Twini Bolingdunensis, *Angli, de rebus Albionis, Britannicis atque Anglicis, commentariorum libri duo* . . . Londini, 1590, page 27. [Bodleian shelf-mark, 8vo. T. 52, Art].



## ANTIQUITY

be freely translated as follows :—‘Now of Lomea, or as it is now called the Goodwin Sands, about which I have read in certain writers, the following may be said. It was once a very fertile land, with many pastures ; it was of lower elevation than Thanet, from which the crossing by boat was of some three or four miles. This island was overwhelmed by an extraordinary gale, combined with a storm of rain and an unusually rough sea. A bank of sand was thrown up and there was formed an area intermediate in character between dry land and sea’. The date of the storm is elsewhere given as 1099.

The second legend is to the effect that Tenterden steeple was the cause of the Goodwin Sands.<sup>2</sup>

The first legend has, it seems to me, an appearance of veracity. The name of Lomea looks like a good old English word meaning Loamy Island ; and this would have been a good description of such an island as might have existed. It could not have been other than low lying and clayey, for geological reasons. Twine’s description, moreover, bears out this inference from geology. The name Lomea could not have been invented ; the only other likely explanation is that it applied, not to the Goodwins, but to some adjacent, low lying portion of the mainland. If so, the name might survive as a field-name on old maps of the region north of Sandwich.

The storm of 1099 is actually recorded in the *Anglo-Saxon Chronicle* and Sir Charles Lyell,<sup>3</sup> referring to this, remarked that ‘the last remains of an island, consisting, like Sheppey, of clay, may perhaps have been carried away at that time’. Borings have revealed, under the sands, deposits of clay resting, at a depth of about 20 feet, upon a floor of solid chalk. These clays may be of Eocene age or they may be more recent.

The strongest argument against the existence of Lomea is that there is no mention of it in Domesday.

The Tenterden legend is rationalized by Gough,<sup>4</sup> probably following Lilburne, as follows :—‘The steeple [of Tenterden] is pretended to have occasioned the Goodwin sands from the neglect of an Abbot of Canterbury to keep up the sea-walls, applying the money appropriated to the purpose to build this steeple’. Or the misappropriation may have applied to some site on the mainland. The selection

---

<sup>2</sup> Richard Lilburne, *Topographie of Kent*, 1659, pp. 262–3.

<sup>3</sup> *Principles of Geology*, 8th edition, 1853, p. 314.

<sup>4</sup> Gough’s *Camden*, 1789, I, 249.



LEAC CON MIC RUIS, VIL  
Ph. V



WESTERN CHAMBER

*facing p. 102*



## NOTES AND NEWS

of Tenterden however is curious ; for the name, originally Tenetwarden, meant the den or forest pasture of the people of Thanet ; and Thanet is the part of England immediately opposite the Goodwins. It would therefore be the place of embarkation for Lomea, as Twine hints.

The theory—it is little more—of a submerged island is a fascinating one, but it is based upon the flimsiest evidence. If the clay beneath the sand is really of geologically ancient origin—and even this is doubtful—there must have been an island there in the Submerged Forest period, when the land stood at least 60 feet higher in relation to the sea, and it may well have been occupied by neolithic man. There seems however to be at least 15 feet of sand everywhere before the clay is reached, and under present conditions the surface of this clay would nowhere be less than eight feet below *low* water-mark. This necessitates an erosion of eight feet of clay plus the tidal rise between low and high water ; such erosion must have occurred between the time of the submergence and the accumulation of the sand. It seems possible but unlikely ; and the verdict must be an open one.

O.G.S.C.

### EXCAVATIONS IN ITHAKA

Mr W. A. HEURTLEY, Assistant-Director of the British School of Archaeology at Athens, sends the following report :—

During the months of August, September and October 1930, excavations were carried out in the north part of the island of Ithaka by the British School of Archaeology at Athens. Four points were explored :—the hill of Pelikata ; the bay of Polis ; the so-called ‘ School of Homer ’ ; the area near the modern village of Stavros.

On the hill of Pelikata, an extensive settlement of the Early Helladic culture (the Early Bronze Age culture of Greece) was discovered. Owing to severe earthquakes the remains are quite ruinous ; little more than heaps of stones. In one area however these heaps of stones have been levelled to make a wide space on which must have stood houses of wattle and daub on stone foundations. Evidences of occupation here were bored stone axes, many clay spindle whorls and masses of pottery. A circuit wall of large irregular blocks of stone ran just below the flat summit of the hill, enclosing part of the settlement, and some of this wall is still preserved *in situ*, as well as part of a paved road about three metres wide which ran alongside. Several burials in large jars were found under the floors of houses. Besides bones

## ANTIQUITY

the jars contained funerary objects, blades of flint or Melian obsidian, stone beads (one was of gold) and small vases, and in one case, the clay model of a bull. Two sherds with curious incised markings were found: one has what looks like a rough drawing of a ship. Since a certain amount of Middle Helladic (Minyan) and late Mycenaean pottery was found mixed with the Early Helladic, it seems likely that the Early Helladic culture in this part of Greece lingered unchanged till Late Helladic times (c. 12th century B.C.), and, if this is so, the heaps of stones may represent the ruins of buildings that were standing at the time of the Trojan War. However that may be, the site was not re-occupied (except for burials in the late Greek and Roman periods) until comparatively modern times.

In the bay of Polis, a cave-sanctuary was explored. This cave, of which the roof had fallen, was plundered some sixty years ago, and in 1904 was partially excavated by Dr Vollgraff. The stratification therefore was confused and could give no help to the dating of the mass of votive objects, mostly pottery, which were recovered. Most of the latter however consist of recognizable types which show that the sanctuary was frequented from the Early Bronze Age to, at least, the first century B.C. Thus the Early, Middle, and Late Bronze Ages (Mycenaean), the Proto-Geometric, the Geometric, the Proto-Corinthian, the Corinthian (among other vases by a finely decorated plate) and later periods are all represented.

Inscriptions include the words *Ευχηνοδοῦσαι* ('my vow to Odysseus') on a fragment of a votive terracotta showing part of the head of a goddess (Artemis?); three sherds have parts of the word *Νυμφαίε* ('to the Nymphs') inscribed on them; one complete inscription in Latin rather roughly scratched on a triangular tile-fragment dates from the year 35 B.C. (the names of the consuls being given) and records a visit on the 1st of October of that year by Epaphroditus an unguent-seller from Rome.

Of the small objects, the most interesting is an ivory pendant representing a small standing figure (3.2 cm. high), around whose neck and arms is passed a bronze cord. Fragments of bronze and iron weapons were common.

The cave has now been fully explored down to the sea-level. But, owing to subsidence, the original floor-level of the cave is below the sea, and could not be reached. One hour's work however in a very limited area sufficed to recover several vases from the water, and there is little doubt that, if the water could be excluded, objects of

## NOTES AND NEWS

great interest could be found, possibly undisturbed. But to do this, considerable expense would be involved.

At the site called the 'School of Homer' further remains of imposing buildings were discovered, but have as yet been only partially cleared. The objects found in this area belong to the third century B.C. and later.

Finally, in the region of Stavros, were found part of a large circuit wall and numerous tile-graves, to be assigned to the fourth or third century B.C. One of the latter contained a complete skeleton, between whose knees rested a skypos with incised decoration below the rim.

Thus the excavations reveal that the north part of the island was inhabited from very early times, but, except for the objects from the cave-sanctuary, there is at present a gap in the archaeological records for the period between 1100 to 400 B.C. It may be that this part of the island remained uninhabited during that period; in any case, further exploration is much to be desired.

The excavation was financed by means of funds collected by Sir Rennell Rodd from friends and lovers of Homer. It is hoped that it will be possible to continue them next year.

### AMBER

Mr Harry G. W. D'ALMAINE, F.S.A., writes:—

I am trying to find the approximate western boundary of the mighty forest of extinct pines (*pinus succinifer*) that, for probably thousands of years, shed those golden tears which time has fossilized and transformed into the semi-precious stone known to us today as Amber.

This forest appears to have spread over the land now covered by the North Sea, across Holland, Denmark, south Sweden, north Germany, over what is now the Baltic (where the chief finds of amber have always been made), on possibly into Finland and Russia and perhaps even into western Siberia. The eastern boundary probably never will be found, but the western end does not present the same difficulties. Plenty of amber has been dredged up by fishermen in the North Sea, and plenty has been found washed up on the coasts of Norfolk and Suffolk, notably between Cromer and Aldborough.

The *pinus succinifer* must therefore have grown on the land, now covered by the sea, up to a distance not so very far from our present coast line. But did this extinct tree ever grow further west and on English soil?



## ANTIQUITY

I have made considerable efforts to find out whether any amber has been ever dug up from the existing soil of Norfolk or of Suffolk ; or for that matter anywhere else on our East coast as, if so, this would tend to prove that the forest extended even into our country. I can however find no evidence that any amber has been so found ; and that at present available tends rather to show that the great amber forest must have come to an end somewhere in the North Sea region not so very far from England.

Perhaps some of the readers of ANTIQUITY may be able to throw a little light upon the subject.

### THE CAR DYKE, LINCOLNSHIRE

Mr C. W. PHILLIPS writes : —

The Car Dyke, the great catch-water drain 50 odd miles long, which runs along the western edge of the Witham and Welland Fens in Lincolnshire and which joins the Witham to the Nen, has long been one of the minor problems of British archaeology.

It is obviously artificial, and also of considerable age, though it is just this question of age which has remained obscure. In many places the watercourse has been destroyed and ploughed out of existence, and its present condition presents every condition from that of a navigable canal to a mere trace in arable land.

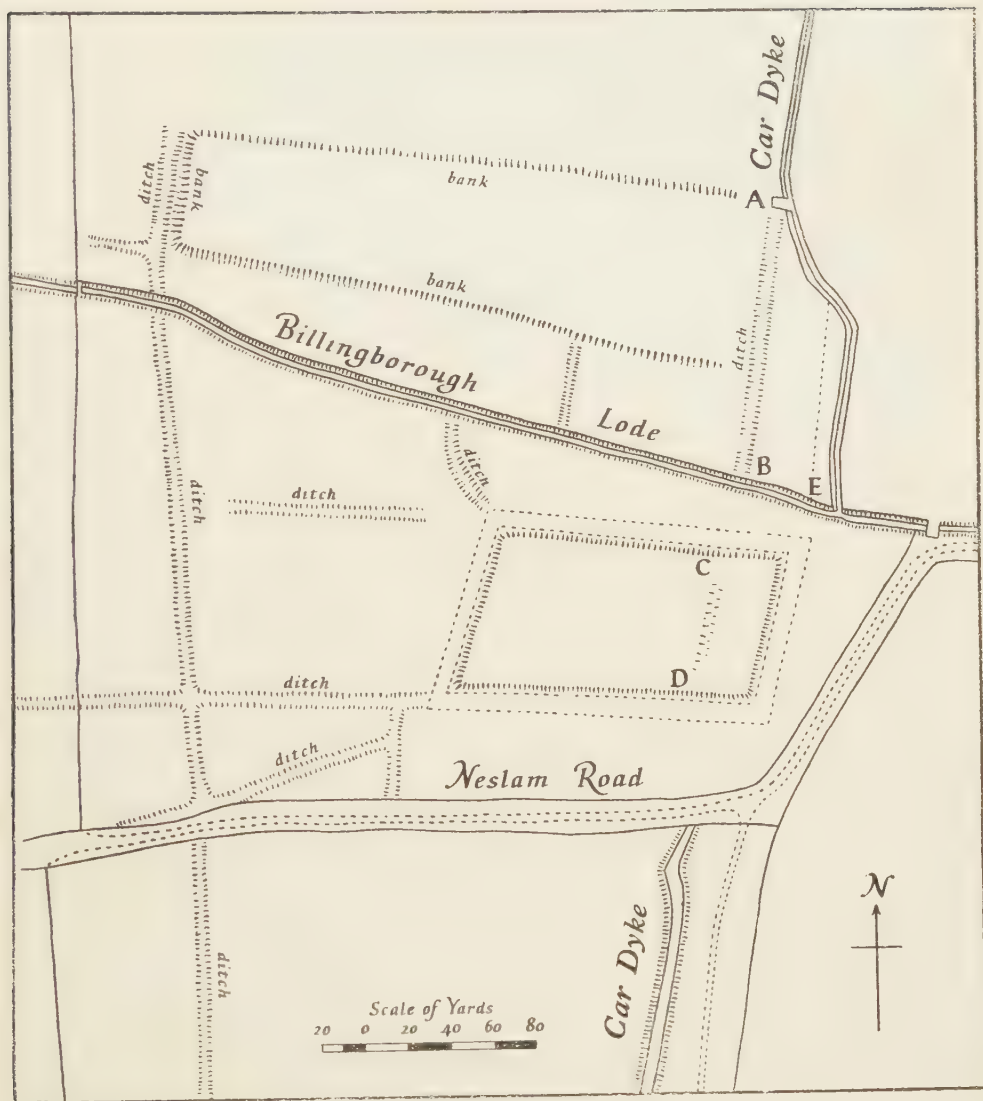
It has generally been assumed that the canal was constructed by the Romans, partly as a catch-water drain to prevent the rainfall of the southern Lincolnshire oolite ridge from entering the fen levels, and partly as a canal for water transport. No excavations have ever been carried out to solve the problem of the exact period of construction, and the only satisfactory approach to the problem has been the collation of the evidence of incidental discoveries connected with it by the late Archdeacon Trollope.<sup>1</sup> Most of the eighteenth century antiquaries indulged in speculations about it, and all were convinced of its Roman character, but they adduced no proofs.

Sufficient documentary evidence remains to show that some sections of the canal were in use for transport in the 14th century, and the discovery of a lost load of dressed Barnack stone in its bed at Morton throws further light on this. There is also the popular belief that 'Great Tom', the largest bell in Lincoln Cathedral, was

---

<sup>1</sup> Edward Trollope, *Sleaford and the Wapentakes of Flaxwell and Aswardhurn*. London and Sleaford, 1872.

# NOTES AND NEWS



THE CAR DYKE, LINCOLNSHIRE

## ANTIQUITY

brought thither from Peterborough by canal, and although this may not be strictly true, it may be reminiscent of the days when the Car Dyke was still put to such uses.

The magnitude of the conception of the whole work, its regularity, and the occurrence of Roman relics at various places along its course all point to a Roman date for its construction, but an opportunity has now presented itself to clear up the whole question once and for all.

On the eastern side of Sempringham parish, eight miles north of Bourne, the Car Dyke is in the middle of a straight run of nearly a mile and a half, and this range shows it in most states from a fair sized watercourse to a mere mark in the fields.

At the north of the point where the road from Sempringham to Gosberton crosses the line of the dyke there is a large rectangular moated enclosure in a grass field. Though called a 'Roman Camp' by the Ordnance Survey, it is almost certainly not older than the Middle Ages if the few relics of pottery turned up by moles are any guide. The enclosed space is some 400 by 180 feet in area, and the significant fact about its situation is that its eastern end overlies the line of the Car Dyke by 75 feet. The appended plan will give a view of the position. The Car Dyke approaches from the south as a wide ditch, 18 feet across at the bottom, and almost completely choked, though in winter it regularly fills with water. Well-marked banks are thrown out on either side, and the whole watercourse is still impressive in its decay. On encountering the line of the modern road it kinks eastwards and at once completely disappears, only showing again in obviously recognizable form after its line has passed under the east end of the enclosure, and across the line of the Billingborough Lode, which is a natural brook, much deepened and embanked of late years. Here it appears again, for from B to A there is a very well-marked trace of the usual width across the grass close to the north of the Lode. It is now quite dry, but preserves the general line of the Dyke so closely that it must be a disused section of it. From A a wet ditch bends eastward a little from the line of the Dyke and joins the Billingborough Lode at E, and the Ordnance Map shows a dotted continuation round the east end of the earthwork to join the Car Dyke south of the road. The only existing evidence south of the Lode that there ever was such an alignment of the Dyke round the earthwork is that at the point of its disappearance south of the road, the Car Dyke makes the sudden bend eastwards which has already been mentioned.

A close study of the ground shows that the original Car Dyke



## NOTES AND NEWS

was in existence before the earthwork was thrown up. Between the points C and D there are clear signs of a subsidence across the area enclosed by the moat, and the growth of a number of reeds along this line shows that the subsoil is very damp.

It is the writer's contention that this marshy depression, strictly aligned as it is with the undoubted Car Dyke to the north and south, is the surviving trace of a section which was filled up by the builders of the earthwork, possibly because the Dyke had so far degenerated that it had ceased to be much of an obstacle.

There seems to have been nothing to prevent them from setting their work further to the west if need be, and it is perhaps significant that to fill their moat they tapped the Billingborough Lode rather than make use of the derelict canal. This being the case, why should a new line have been cut for the Car Dyke, at some later date, to take it round the east side of the work?

The age of the earthwork is not definitely known, but it has a number of associated enclosures to the west and north sketched in on the plan, which make it highly probable that it was some sort of moated farmhouse or grange, possibly belonging to the famous abbey of Sempringham, which was situated little more than a mile to the west. It is conceivable that the medieval exploiters of this region found it desirable to re-open the Car Dyke as a means of communication and drain for local purposes. The Billingborough Lode has been considerably increased in depth in living memory, and may then have become lost in the marshes only a short way to the east of this site. Flooding from the Lode, added to difficulties arising from the insecure foundation of the east end of their enclosure, may have been the inducements which led to the re-cutting of the Dyke on an amended line.

Most of this is mere speculation, but here is an excellent chance to clear up the age of the Car Dyke by a few comparatively slight excavations. The date of the enclosure should not be difficult to determine, and if it is discovered that the original Car Dyke does underlie it, a positive period will be established at which the Car Dyke was already in ruin, even if no more direct evidence of its age is forthcoming.

The Cambridgeshire Car Dyke has been conclusively proved Roman,<sup>2</sup> and a chance comes to clear up the date of a work 50 miles long at the cost of a few trenches.

Who will undertake it?

---

<sup>2</sup> Dr Cyril Fox, *The Archaeology of the Cambridge Region*, pp. 179-80.

## ANTIQUITY

### A NOTE FROM ITALY

The latest number of the *Bullettino di Paletnologia Italiana*, 1929, XXIX, contains several articles of unusual interest.

H. M. R. Leopold writes on the original home of the Terramaricoli. Criticizing Pigorini's comparison of the pottery from the Terremare with that found at Toszeg in Hungary, he shows that the resemblances are by no means close. On the other hand the finer class of Italian ware, which is decorated, shows a great deal of similarity in its pattern to the pottery of the Lausitz culture in central and southern Germany. The best explanation of this is said to be that the makers of the finer pottery were travelling craftsmen who came over the Alps and wandered from place to place.\* Consequently no argument as to the geographical or racial origin of the Terramaricoli can be drawn from the pottery.

In this connexion we may draw attention to a remark made by Antonielli in the course of a review at the end of the volume. It is doubly significant as coming from Pigorini's most devoted follower. The Terramaricoli, says Antonielli, must be of the same stock as the lake-dwellers north of the Alps; their culture is an essentially Italian species of the genus lake-dwelling. Prof. Childe has elsewhere pointed out the tenuity of the Hungarian chain; so that it seems as if we should look rather to Switzerland and Savoy for the nearest relatives of the Terramaricoli.

Taramelli's address to the International Congress of Archaeology held at Barcelona in 1929 is reprinted in the *Bullettino*. It deals with the question of connexions between Sardinia and Spain, as well as with the particular description of a sanctuary of nurag style. In the eneolithic period he remarks on the general similarity of the bronze weapons and implements, and still more of the pottery found at Anghelu Ruju, to that of the contemporary Spanish sites. He rejects the explanation that each country is indebted to importations from Crete or the Aegean. He rejects also the suggestion that Spanish colonies were planted in Sardinia. Independent development aided by commerce carried on in Sardinian ships is rather the clue to the eneolithic period in the island. In the nurag period again the tomb-architecture shows its native evolution in all the stages back to the earliest Dolmens, but the nurag itself is a form originally adopted from the East, which blossomed into a particular species in Sardinia because it is so exactly

---

\*On purely *a priori* grounds this explanation strikes us as most improbable.—ED.

## NOTES AND NEWS

adapted to the climatic requirements. The mineral wealth of the island in copper, lead and silver was the basis of its prosperity during the flourishing time of the warrior people of the nurags.

The earliest Sardinian temples were grottoes, but the special native cult was always that of the water-spring. From the little fountain protected by a miniature cupola, the type develops to a more complicated form. On the plateau of Serri is seen the latest evolution. Within a huge temenos protected by betylic stelae at the entrance are two temples, one of which stands over the spring. It is roofed with a cupola; it has an atrium, vases for lustration, altars, tables of offering, betyloi. The bull's head is apparently the image of the deity. A second temple, reached by a narrow passage from the first, is rectangular and hypaethral; here the sacred emblem is the dove. Near the temenos is an enclosure with seats for the worship of the axe, for the double-axe occurs here as well as in Crete. Outside the temples is the house of the chief, a nurag of fine and elaborate construction.

### THE LONDON MUSEUM

The Trustees of the London Museum have made a new departure in museum-work by instituting a Studentship for the encouragement of research in some subject germane to the interests of the Museum. They have been enabled to take this step through the generosity of Viscount Esher, who has placed at the disposal of the Trustees the sum of £300 per annum as a memorial to his father, the late Lord Esher, one of the founders of the Museum. The Studentship will be awarded 'for the purpose of promoting research into some aspect of the history or archaeology of London whether by documentary research, by excavation, by museum-work or by a combination of these methods'. The award will be made by the Trustees on the recommendation of an Advisory Committee, on which representatives of the Society of Antiquaries, the British Academy and the Universities of Oxford, Cambridge and London will serve, and the tenure will be normally for a period of two years. The researches of the Student will be incorporated in a thesis which may, in due course, be published at the direction of the Trustees. It is hoped that, in the course of years, this will result in a very substantial body of useful and original material bearing directly or indirectly upon the arts, crafts and history of the Metropolis; and the scheme may be regarded as an interesting experiment in the development of that extra-mural work which is now regarded as appropriate to our National Museums.



## Recent Events

*The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.*

The Research Committee of the Congress of Archaeological Societies has issued an important report on the need for co-ordination in excavation. We had hoped to print the report but extraordinary pressure on our space has prevented this.



The Anglo-Saxon (6th century) 'Winchester bowl'—the discovery of which is recorded in *ANTIQUITY* for December, p. 494—has been placed on permanent loan in the British Museum by the Hampshire County Council. A replica will be presented to the Winchester Museum.



A new opportunity has arisen for those claiming the art of the 'diviner'. By means of this 'gift' a young woman is reported to have been the means of finding at Leprignano, on the site of the old town of Capena, two Etruscan tombs containing silver, bronze and earthenware objects. (*The Times*, 16 January).



The important collection of implements, Roman jewellery, and other objects found on Lambay Island, off the north coast of co. Dublin, in 1926-27 has been presented by Lord Revelstoke to the National Museum of Ireland. (*Irish Times*, 7 January).



Excavations on the Romano-British site at Walls Field, Baldock, Hertfordshire, were continued last year under the direction of Mr W. Percival Westell, Curator of the Letchworth Garden City Museum. A full report, with notes on the cemetery found at Hawthorn Hill, is printed in *The Times*, 3 December, p. 19.



First reports from Mr C. L. Woolley on the ninth season's work at Ur by the joint expedition of the British Museum and the Museum

## NOTES AND NEWS

of the University of Pennsylvania were published in *The Times*, 30 December (p. 10) and 6 January (p. 11), and forecast the possibility of discoveries of equal interest to those of previous seasons. The site of the tombs of the kings of the Third Dynasty—among whom were Ur-Engur, who built the Ziggurat about 2400 B.C., his son Dungi, and his grandson Bur-Sin may yield information of the greatest importance. Illustrations of the tombs were given in *The Illustrated London News* of 3 January.



Excavations have been carried out near Akhiar (Sevastopol) in the Crimea and a well preserved basilica of the fifth century is reported on the site of the ancient Gothic town of Eski-Kermen. (*The Times*, 10 October).



The discovery of a hitherto unknown Roman camp at Wall, near Lichfield is reported. (*Walsall Observer*, 25 October).



Roman pottery-works have been found near Newtown, in the Isle of Wight. (*Portsmouth Evening News*, 27 October).



Interest has been aroused by the Persian Government having granted Professor J. H. Breasted, of Chicago, permission to conduct excavations at Persepolis, the ancient capital of Persia. (*Morning Post*, 11 December). We have on more than one occasion pointed out the possibilities awaiting scientific excavation in Persia and Professor Breasted will make good use of his opportunity.



We are reminded of the article on 'Submarine discoveries in the Mediterranean' by Monsieur A. Merlin in our last number by the report in the *Morning Post*, 15 December, that fishermen working off Salerno have brought up a large bronze head of Jove. A quantity of 'classic statuary' has also been dredged from the inner harbour at Piraeus. (*The Times*, 13 December).



A fine hoard of silver ware and jewellery found at Pompeii in a house in the Via dell' Iside is announced by Professor Majuri, Superintendent of Excavations in South Italy. (*Morning Post*, 8 December; *The Times*, 21 January). Some of the principal pieces were shown in the *Illustrated London News* of 10 January, and *The Times*, 7 January, p. 16.

## ANTIQUITY

An illustrated account by Dr R. E. Mortimer Wheeler of the season's work at Verulamium is printed in *Discovery* for December, pp. 393-6.



The excavations at Colchester last year show that there was an active British occupation there for a hundred years, 50 B.C. to A.D. 50. The pottery found is of great importance as evidence of the import of Arretine ware of Italy and the early red and black pottery of Roman Gaul and the Rhine into Britain before the Roman conquest. Glazed cups, bowls, and platters were found in every hut. There does not appear to have been definite planning of streets. Refuse pits were numerous and there were ample drainage trenches. A timber-lined well, perhaps the earliest of its type in the country, was found. There appears to have been very little change in the ordinary life of the settlement under Roman rule. (*The Times*, 23 October).



A series of flints of unusual type has been obtained from the Swanscombe gravel pits near Northfleet, Kent. (*The Times*, 6 November).



Chesters Museum, well known to visitors to Hadrian's Wall, has been given in trust to the county of Northumberland by Mr John M. Clayton. The first trustees, including Sir George Macdonald, Mr R. Holland-Martin, Mr R. G. Collingwood, Mr Parker Brewis, and Mr R. C. Bosanquet, are sufficient guarantee that the care of the collection, one of great interest, is ensured. A note on the formation of the Museum was contributed to *The Times*, 31 December, p. 12.



A second expedition has been formed to continue the exploration of ancient Jericho begun last year with the co-operation of Sir Charles Marston and the late Lord Melchett. Professor John Garstang is Director. It is proposed to complete the investigations of the defences of the city and to work on an unexcavated area which it is expected will reveal remains of the late Bronze Age. (*The Times*, 1 January). An illustrated article on Jerusalem, with plans, by Professor Garstang, is published in the *Illustrated London News* for 17 January.



It is reported in *The Times* of 20 December (p. 11) that M. Ch. Virolleaud, formerly Director of the Archaeological Service at Beirut, has by means of further inscriptions discovered at Ras Shamra been able to decipher the cuneiform tablets found there in 1929. Attention was



## NOTES AND NEWS

first called to them by M. Virolleaud in *ANTIQUITY*, 1929, III, 350, and they are also referred to in the article by M. F. A. Schaeffer in our last number (p. 464).



The new Ancient Monuments Bill was introduced into the House of Lords on 3 December. It provides that for the purpose of preserving the amenities of any ancient monument the Commissioners of Works may prepare and confirm a preservation scheme for any area comprising or adjacent to the site of the monument. The general provisions of the Bill are set out in *The Times* of 11 December.



The Second International Congress of the History of Science and Technology will be held in London 29 June to 3 July 1931. Those interested should communicate with the hon. secretary of the Congress, Mr H. W. Dickinson, The Science Museum, South Kensington, S.W. 7.



A French expedition is reported to be exploring the Sahara with 'camions' and an aeroplane. Between its departure, announced for November last, and the Colonial Exhibition at Paris, announced for this summer, it is proposed, according to M. Louis Marin (1) to prove that crossing the Sahara is a practical proposition, (2) make trigonometric and geodetic surveys by aeroplane (?), (3) carry out excavations and open tombs, (4) make casts of rock-sculpture, (5) collect ethnographic material, observe magnetic phenomena, etc.—in fact generally to run amok in a scientific sense. (G. de Lafrete in *L'Echo de Paris*, 8 November).



A labourer digging a pipe-trench in a meadow at Stert, on Holes Bay, Poole Harbour (Dorset), has come upon a black Romano-British pot of native ware, containing about 1000 coins (3rd brass), Valerianus to Claudius Gothicus, about A.D. 254-268.



We are indebted to a reader in East London, Natal, for drawing attention to the alleged discoveries of the Italian expedition in South Africa. So much nonsense, however, has been written on this subject in the press that we prefer to wait until some authoritative announcement has been made by the leader of the expedition.

## ANTIQUITY

Director Bersu of the Römisch-Germanischen Kommission gives an all too brief preliminary notice of the excavations on the Goldberg—a 'promontory fort' in Würtemberg. No less than five distinct occupations were detected, and complete plans of the several villages, together with many important architectural details, have been obtained. The history of the site began in neolithic times with a Danubian (Rössen) settlement followed by a fortified village of Michelsberg folk (probably related to the Windmill Hill people of Britain) and goes down to middle La Tène times. (*Deutschtum und Ausland*, nos. 23-24, communicated by Prof. V. Gordon Childe).



An account of the ninth season's work at Richborough under the supervision of Mr J. P. Bushe-Fox and Mr W. G. Klein, acting for the Society of Antiquaries, is published in *The Times*, 12 November, p.16.



Proposals for an extensive excavation of the site of Samaria, Palestine, are announced. It will be under the auspices of Harvard University, the Palestine Exploration Fund, the British School of Archaeology in Jerusalem, the Hebrew University of Jerusalem, and the British Academy. The Director is Mr J. W. Crowfoot and it is hoped to begin work this March and continue until the middle of the summer. (*The Times*, 22 November, p. 14).



Casts of the skull and lower molar found at Chou Kou Tien, near Peking, have been presented to the British Museum (Natural History). (*The Times*, 24 November, p. 9).



Through the generosity of an anonymous Syrian lady a Chair of Archaeology has been founded at the American University of Beirut. The first holder is Dr Ingholt, the Danish archaeologist. (*The Times*, 27 November, p. 20).



The excavation of a fortified hill-settlement has been undertaken by Mr V. E. Nash-Williams, F.S.A., at Llanmelin, near Caerwent. The evidence does not allow precise dating but the pottery is assigned to La Tène period, and the settlement is not later than 200 B.C. A brief outline of the work accomplished is printed in *The Times*, 1 December, p. 16.

## Some Recent Articles

*This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.*

Decorative Patterns of the Ancient World, by Flinders Petrie, K.T., F.R.S., F.B.A. London: University College, Gower St., and Bernard Quaritch, 1930. 88 plates.

We wish to draw attention to this valuable collection of designs which, by its character, is hardly susceptible of review. It will be found most useful for reference. We can only thank the author for the gift. For thirty years he has been looking forward to the publication of some such manual.

Die Gliederung der Glockenbecher Kultur in Mitteldeutschland, by Gotthard Neumann. *Praehistorische Zeitschrift* (Berlin: Leuschner) 1929, xx, 3-69.

This is a valuable paper. It gives a list of all the finds and a distribution-map indicating the area occupied by the culture. It is followed by a similar paper on the Aunjetitz culture, by the same writer.

Premières impressions de voyage sur la préhistoire sud-africaine, by the Abbé Breuil. *L'Anthropologie*, 1930, xl, 209-23.

Outillage préhistorique d'un nouveau sondage profond dans L'Acropole de Suse, by R. de Mecquenem. *Ib.id.* 225-32.

An important note on a subject which we hope to deal with in a future number of ANTIQUITY.

La Cronologia della ceramica dipinta dell' Europa orientale, [Chronology of painted ware in Eastern Europe], by Vladimir Dumitrescu. *Ephemeris Dacoromana*, 1930, iv, 257-308.

Chronological tables on pp. 301 and 307. The author places Butmir at 2800 B.C.

Craftsmen's measures in prehistoric times, by Ludovic MacLellan Mann. Glasgow, 1930. Price not stated. Paper covers, 24 pages and illustrations.

Claims, *inter alia*, that 'in the earliest age of human workmanship yet traced, man was already using a foot-rule and a scale of measures'. The writer admits that his theme is 'at the first glance unfamiliar, perhaps even incredible' and we entirely agree.



## ANTIQUITY

Wales and Archaeology, by R. E. M. Wheeler. The Sir John Rhys Memorial Lecture, British Academy (*Proceedings*, vol. xv). Milford, 1930. 24 pp. 1s 6d.

A short account of the principal Welsh topographers and archaeologists.

Neolithic pottery and other remains from Pangbourne, Berks, and Caversham, Oxon., by Stuart Piggott. *Proc. Preh. Soc. East Anglia*, 1928-9, VI, 30-39

A short account of two hitherto unpublished finds of neolithic pottery, well and fully illustrated, with general notes on the types represented. The Pangbourne find was a burial—a skeleton with associated grave-goods. This type of burial is rare in England, where multiple, generally mutilated, burial in long barrows is the rule, but Howe Hill, Duggleby (Yorks, E.R.) is cited by way of comparison.

Discoidal polished flint knives—their typology and distribution, by J. G. D. Clark. *Proc. Preh. Soc. East Anglia*, 1928-9, VI, 41-54.

This is an important paper. From a study of the typology and distribution the writer concludes that the type is of native origin and that it had a short life. Its distribution coincides very closely with that of beakers, and associated finds tend to confirm the obvious conclusion. The distribution further suggests that the main body of the Beaker-folk landed and settled in East Anglia, on the shores of the Fenland, and that they spread thence over the rest of England. We look forward to more articles like this from Mr Clark.

The Arab dynasty of Dar For (Darfur), A.D. 1448-1874, by Arthur E. Robinson. *Journ. African Society*, 1928, XXVII, 353-63; 1929, XXVIII, 55-67, 274-80, 379-84; 1930, XXIX, 53-70, 164-80.

Contains more than the title would suggest, including a chronological table of the Eastern Sudan, B.C. 31-A.D. 1504 (XXVIII, 55-64) and valuable pedigrees.

Australian Aboriginal Art; issued in connexion with the Exhibition of A.A.A., National Museum, Melbourne. Printed and Published for the Trustees of the Public Library, Museums and National Gallery of Victoria, by H. J. Green, Govt. Printer, Melbourne, Australia July 1929. pp. 39, 27 illus. (2 coloured). 1s.

A handy little guide-book.

Iconographie des Bacchantes d'Euripide, by Hubert Philippart. *Revue belge de philologie et d'histoire*, 1930, IX, 1-72.

A well illustrated and scholarly paper, fully documented.

The Early Castles of Mar (1st paper), by W. Douglas Simpson. *Proc. Soc. Ant. Scot.* 1928-9, LXIII, 102-38.

We reserve fuller notice until the series is complete.

## NOTES AND NEWS

Sanctuaire punique découvert à Carthage, by Louis Carton. Geuthner, Paris, 1930. pp. 55, 6 plates.

The excavations of the Temple of Nabû at Nineveh, by R. Campbell Thompson and R. W. Hutchinson. *Archaeologia*, 1929, LXXIX, 103-48, 3 plates. (Sold separately by John Johnson, Oxford, 12s. 6d).

Sull' origine e l'evoluzione delle scuri di rame Carpato-danubiane [Origin and evolution of Carpatho-danubian copper axes], by Ecaterina Dunareanu-Vulpe. *Ephemeris Dacoromana*, [Annual of the Roumanian School at Rome], 1930, IV, 181-211.

Station chelléenne et acheuléenne de surface à Kalaab Yalmour, Alaouites (Syrie), par A. Burkhalter (Lattaquié) et le Dr Marcel Baudouin. *Bull. Soc. préh. franc.* 1930, XXVII, 391-4.

Camps, enceintes, mottes et fortifications antiques du département de l'Eure, by Dr R. Doranlo. *Bull. Soc. Antiq. de Normandie*, 1920 (1921). pp. 134, 7 plates.

Un station du cuivre à Auzay, près Fontenay-le-Comte (Vendée) by G. Guerin. *Bull. Soc. préh. franc.* XXVII, 68-70.

This is evidently an important site, and one that should be fully and carefully excavated, if only to place the study of prehistoric pottery in France upon a sure foundation. Its present chaotic state is a serious obstacle to progress.

Fouilles paléolithiques en Palestine, 1928-9, by Miss D. A. E. Garrod. *Bull. Soc. préh. franc.* XXVII, 151-60.

Essai sur la chronologie préhistorique de l'Afrique occidentale française, by R. Furon and P. Laforgue. *Bull. Soc. préh. franc.* XXVII, 171-4.

La préhistoire en Palestine d'après les travaux récents du Dr L. Picard. *Bull. Soc. préh. franc.* XXVII, 248-55.

The results, based largely on the typology of flint implements, of recent French investigations in the region between Mount Carmel and the Lake of Tiberias. Bibliography.

Bread-making in old Pompeii, by Tatiana Warscher. *Art and Archaeology*, October 1930, XXX, 103-12.

A useful and fully illustrated 'encyclopaedia' article.

Sinhalese Temples, by A. M. Hocart. *Art and Archaeology*, October 1930, XXX, 113-20.

## ANTIQUITY

Le paléolithique de l'Afrique mineure, by Hugo Obermaier. *Revue Archéologique*, May-June 1930, xxxi, 253-73.

Professor Obermaier, author of *Fossil Man in Spain*—a standard text-work covering far more ground than the title suggests—is of course an authority of the highest standing, and his article on North Africa is a welcome addition.

La nécropole du Castelet, by F. Benoit. *Mém. de l'Institut des fouilles de Provence* (Paris, Berger-Levrault, 1930) pp.33. [Short notice in *Rev. Arch.* xxxi, 370].

Arthur and Athelstan, by W. G. Collingwood. *Saga Book of the Viking Society*, 1928, x, [separate pagination].

Imitations of early *sigillata* shapes by late Romano-British potters, by Thomas May. *Trans. Birmingham Arch. Soc.* 1927 (1930), LII, 240-44, 6 plates.

Proceedings of the Spelaeological Society of Bristol University, 1928, vol. III, no. 3. 7s 6d.

This number is mainly occupied by the various reports of the society's work in Ireland, where remains of palaeolithic man were found in a cave. There is a valuable note on palaeoliths from gravel terraces of the Bristol Avon, by Messrs J. A. Davies and T. R. Fry.

The Economic and social history of an English village (Crawley, Hampshire) 909-1928, by Norman S. B. Gras and Ethel C. Gras. Harvard Univ. Press, Cambridge, U.S.A., 1930. [Harvard Economic Studies, 34]. Milford, 34s.

We are not greatly impressed with this book. So far as we have been able to test it, it falls short, both in knowledge and accuracy. For instance, Professor Gras is apparently ignorant of Dr Grundy's work, since he does not refer to it in dealing with the Crawley charter (pp. 177-82). It was dealt with by Dr Grundy in *Arch. Journ.*, LXXXI, 1924 (issued 1929), 42-6. The description of Celtic fields is very unsatisfactory, and it is quite incorrect to say that air-photography was not 'applied to English agrarian history' until after it had been 'used on the deserts of Egypt to disclose the location of buried tombs'. Combe-furlong is not evidence of a Celtic settlement, since O-E *cumb* was a loan word. There are 163 pages of text and 536 of 'Documents and Statistics'.

Further notes on the Archaeology of Sheppard island, by C. van Riet Lowe. *South African Journal of Science*, xxvi, Dec. 1929, pp. 665-83.

Describes the discovery of a Stone Age site on Sheppard island in the Vaal river, where Smithfield, Fauresmith (together with Middle Stone Age types), and late Stellenbosch industries occur in stratigraphical sequence. On typological grounds



## NOTES AND NEWS

it has long been thought that the Stellenbosch type of industry was older than that of the Fauresmith. Here is stratigraphical proof. Further, Lowe determines here a definite series of climatic changes which will presumably be found to have a wider application in South Africa. Briefly he suggests that late Stellenbosch man, together with the extinct South African mammoth,\* lived during a period of heavy but declining rainfall. Fauresmith man, together with *Bubalus Bainii* and *Equus Capensis*, lived under drier and perhaps warmer conditions. Later almost arid conditions set in and mankind seem to have deserted the site. Finally damp conditions returned and Smithfield man occupied the spot. M.C.B.

Fresh light on the Prehistoric Archaeology of South Africa, by C. van Riet Lowe. *Bantu Studies*, III, no. 4, Dec. 1929.

Gives an account of a 'prehistoric' expedition led by the author during the visit of the British Association to the country. The Abbé Breuil was among the party. Among some of the results obtained one may note that a definite beginning was made in subdividing the Stellenbosch industries into a lower, middle and upper series. Also a sequence was obtained in the case of some of the Bushman paintings on the western side of the Drakensberg mountains. These tentative beginnings will doubtless blossom later, the suggestions made being used as the starting point for further investigations. M.C.B.

Notes on some stone implements from Tuinplaats, Springbok Flats, by C. van Riet Lowe. *South African Journal of Science*, XXVI, Dec. 1929, pp. 623-630.

Gives a brief account of some surface finds of the middle Stone Age near the place where Springbok Man, *Bubalus Bainii* and *Equus Capensis* were discovered. Though there is no stratigraphy, and proofs of any real association are absent, there is, on the other hand, no reason absolutely to deny the possibility of such an association. It can only be hoped that further finds will help to clear up and settle this important point. M.C.B.

Certain Stone implements of the scraper family found along the coast of New South Wales, by C. C. Towle, B.A. (privately printed, 1930).

Mr Towle is not happy at the classification of certain stone tools found in Australia as 'chipped back knives'. He does not consider that the working edge is the one formed by the intersection of a primary flake with the main flake, but suggests that the blunted back is the result of continual re-sharpening of a scraper which becomes steeper at each operation. Analogy with somewhat similar types occurring in other parts of the world—though of course not necessarily belonging to the same culture as those found in Australia—would hardly seem to back up Mr Towle's contention. However it is always well to docket such suggestions as further evidence may turn up which will help to elucidate the question. M.C.B.

---

\* Naturally it would be extremely unwise in any way to correlate this South African species of mammoth with the beast of the same name found in Europe.

## Reviews

WHO WERE THE GREEKS? By JOHN LINTON MYRES. *Berkeley, California: Univ. of California Press. London: Cambridge University Press, 1930. pp. xxxvii, 634. 3s 6d.*

Of the numerous attempts to synthesize the prehistory of Greece which have appeared within recent years, this is the first to take account of all the kinds of evidence, including one, the historical content of folk-memory, hitherto scarcely exploited at all. Out of the mass of complicated and seemingly conflicting material Prof. Myres has created order and coherence and gone a very long way towards answering the question which forms the title of the book. At times the temptation to strain one class of evidence to suit another has not been resisted; at times the archaeological evidence has been made more confusing than it really is; at times the obscurity of the subject is reflected in the thought, so that in the case of certain problems to which we should have liked an answer we are left wondering what the author's answer really is. No doubt the elusiveness is deliberate and the thought, as befits the theme, is, like the Greek nation, 'ever in process of becoming'. Not the least of the merits of this book is the beautiful prose. We doubt if since Newman, a learned subject has been handled in English so expressive, so terse and so melodious. Some passages such as the retrospect and conclusion (pp. 529-530) and indeed the whole Epilogue will surely pass into anthologies as models of lucid and vigorous style.

After treating in the first six chapters the various kinds of evidence in succession, Prof. Myres passes in the seventh to what is the most absorbing part of the book, *i.e.* the events that preceded and succeeded the Dorian invasion, and the Dorian invasion itself. The last chapter is a masterly appreciation of these other than material factors, which illustrated in their art, literature and music, exemplify the effort of the Greek nation, now conscious of unity, to adapt itself to the problem of how to live well.

In discussing the 'Coming of the Dorians', Prof. Myres has, we think, scarcely done justice to the archaeological evidence. It is becoming increasingly clear that the cultural background of all that happened in North Greece is to be found in the Third Thessalian period (or rather that part of it which is represented by the  $\Gamma 3$  wares, since the  $\Gamma 1$  wares should be relegated to the Second Period). This culture is partly an extension southward of the Early Macedonian Bronze Age and partly an extension northwards of the 'smear ware' or Early Helladic culture of the South, the two streams meeting somewhere in Thessaly. But whereas in southern Greece, Early Helladic is transformed into Middle and Middle into Late Helladic, in Thessaly (as in Macedonia) the Early Bronze Age culture was never transformed but merely penetrated by influences: 'grey-ware', Mycenaean or other. And just as in Macedonia, in spite of the interval of time that separates them, the Iron Age pottery is largely a survival of that of the Early Bronze Age, so the Marmáriani and Theotókou pottery shows that much the same was the case in Thessaly too. Now this Early Bronze Age culture spread right across Greece, the northern or Thessalo-Macedonian variety reaching Epirus (as recent excavations

## REVIEWS

show), the central or southern variety reaching Lefkás and Ithaka, where there is reason for supposing it maintained itself almost unchanged till Late Mycenaean times. The fabrics of Thermon and Lianokladái are local specialized developments in which 'grey-ware' and painted ware influences are apparent but the basic element is unmistakably Early Bronze Age in character. Any explanation of movements of people in north and northwest Greece must therefore take into account the unity and persistence of this wide-spread and deeply-rooted culture. For, other evidence apart, the archaeological evidence shows that the coming of the divine-born dynasties and that of the Dorians must have been movements of people who were ultimately akin to those they came among, but who, owing to geographical reasons, had been less affected by influences operative at the centre, and it follows that if the spread of grey-wares is to be associated with the spread of Indo-germanic speech (as many hold), then the degree of Indo-germanization of these outlying regions must eventually be estimated from the proportion of grey-wares found in their excavated sites. But by proposing as the bearers of Indo-germanic speech the 'smear-ware' people, or rather a hypothetical folk, without pot-fabrics, within the 'smear-ware' area (p. 287), Prof. Myres has, we venture to think, failed to grasp the unitary character of the Early Helladic-Early Macedonian culture. The adoption within an area large enough to possess widely different kinds of climate of this or that kind of house is not so significant as the prolonged use of domestic pots that preserve identity of shape and of minute details.

The view that spectacle-fibulae formed part of the original Dorian equipment (p. 245) receives support from the inventory of the Marmáriani tombs. These tombs, which, on other grounds, are considered to be those of the Lausitz invaders of Macedonia, contain, among other remarkable ornaments, iron spectacle-fibulae with cone-shaped bosses (positive proof of their Northern origin) made of bronze and plated with gold. If, as is quite possible, the Lausitz people pushed straight on into Thessaly, the Dorians (though south of Thessaly) may have had time to borrow the idea of the spectacle-fibulae before they started on their Peloponnesian adventure about 1130 B.C. Incidentally, the fact that the spectacle-fibulae in the Marmáriani tombs are made of iron, as well as the rings and swords, suggests the motive that drew the Lausitz people southwards.

After reading what Prof. Myres has to say on the origin of the concentric circle, we are still uncertain as to his meaning, since he seems to contradict on one page (p. 453) what he says on another (p. 454). Perhaps, after all, there is no unitary explanation of its origin, but all three factors must be taken into account; one, the tradition of concentric circles, either stamped or painted, which beginning in the Early Bronze Age never died out. Good intermediate examples are the matt-painted jar from the Amyklaion with concentric circles in triple outline between horizontal zones, and an incised concentric circle in six-fold outline from a Late Bronze Age stratum in Chalcidice (shortly to be published). Secondly, the traditional preference of the Lausitz invaders for half-concentric circles in fluted technique; thirdly, the influence of Late Mycenaean spirals which when carelessly drawn and disconnected are almost indistinguishable from concentric circles.

The considerable quantity of Mycenaean pottery found in Macedonia is *not* (as Prof. Myres says, p. 453) imported. It is almost exclusively made of local clay.

On page 245 Prof. Myres speaks of the contamination of the painted ware cultures by local cultures 'older established'. If by these he means the Early Bronze Age Cultures, the statement is disproved by recent discoveries which show that these are everywhere later than and imposed upon the painted wares.



## ANTIQUITY

That the spiral entered the repertoire of Cycladic potters *via* Thessaly is likely (p. 239), especially since there is now reason for supposing that it entered Thessaly in an incised form and was subsequently translated into paint on arrival there. This derivation would also equate with the appearance of painted spirals, obviously of Cycladic origin, on EM III pottery of Crete. The only difficulty is that the incised spiral-band pottery of Macedonia which corresponds most closely to the Cycladic, even to the wedge-shaped excisions with which the spirals are associated, is demonstrably much later.

Refugees from Cucuteni B (datable by Minyan sherds to about 1800 B.C.), cannot have become the 'spiral-using intruders into Thessaly' about 2500 B.C. (p. 241).

We are puzzled by the statement on p. 259 (repeated elsewhere) that prehistoric funerary tumuli are common in Macedonia. The only ones known are of Hellenistic date.

It would be possible to find other points to criticize, did space allow, but, when all is said, one can feel nothing but admiration and gratitude for this penetrating and inspiring book.

W. A. HEURTLEY.

THE DANUBE IN PREHISTORY. By V. GORDON CHILDE. Oxford: the Clarendon Press, 1929. pp. xii, 447, with 100 plates and 11 maps. 42s.

Quite as notable as Prof. Myres' *Who were the Greeks?* (reviewed above), though in a different way, is Prof. Childe's *The Danube in Prehistory*. As being largely a record of things found, it is, naturally enough, not easy reading. A presentation of facts lends itself less easily to fluent prose than the expression of ideas. The repetition of *clichés* becomes almost inevitable, but we wish Prof. Childe could have avoided phrases like 'the precious metal', 'the good father', etc., with which the text is too liberally sprinkled. The illustrations, though generous, are not really adequate, and to complete the usefulness of the book, an album of plates on the lines of Montelius' *Civilisation Primitive en Italie* should be added.

This much having been said by way of criticism, there remains little to do but record admiration for what is nothing less than a monumental piece of learning. To gain some idea of the complexity of the subject, one need only glance at the Table of Interrelations. When it is realized that almost everyone of the cultures there appearing is faithfully described in detail, that the position of each group within the whole as well as in its relation to outside groups is fully discussed, one's admiration is increased still more. Above all, one must respect the disarming modesty with which the author expresses his own opinions as well as the courteous deference with which he treats the opinions of others.

The major problems of Danubian prehistory which are in dispute are the date of Vinča I (there is a gap of nearly 1000 years between Prof. Childe's reckoning and that of the excavator, Prof. Vassič), the relation of the Danubian painted wares to the painted-ware cultures of the 'Black-Earth' region and of both to the Aegaeon, the origin of Corded ware, the interrelations of the Lausitz and allied cultures, and finally the chronology of the Hungarian urnfields. Of all these Prof. Childe states the *pros* and *cons* with lucidity and fairness, sometimes adding his own view, sometimes preserving an open mind.

Towards the solution of the second and third of these problems more recent discoveries in Macedonia have contributed something. This year's excavation at Sérvia in the Haliákmon valley, for example, shows that Crusted ware, incised spirals, black-polished pottery (Thessalian Γ1 and its varieties) as well as a simple painted pottery all

## REVIEWS

converged upon and presumably entered Thessaly together. Their simultaneous appearance coincides on the site with the destruction by fire of a settlement of Thessalian A type, and is followed, with what must have been a very short interval of time, by the arrival of Early Bronze Age intruders from Macedonia. Inferences to be drawn from all this are that the source of the movement lay beyond the Danube, where crusted ware, incised spirals and a very similar painted ware are at home; that the black-polished ware was developed *en route*, since it is identical with similar pottery now known from numerous Macedonian sites; that the second Thessalian Period (including Γ1 wares) is the result of this movement, the Dimini spirals being the incised spirals translated into paint; finally that the second period in Thessaly must have begun somewhere about 2500 B.C. All this has bearing too on the origin of the painted-ware cultures of the 'Black-Earth' region, which may, on the analogy of Sérvia, turn out to be (as many think) the result of a similar movement from the Middle Danube, but in an eastward direction. The objection that no bored axes occur on those sites is true of Sérvia also.

Prof. Childe's view that Corded ware originated in South Russia receives support also from Macedonia, where stone axes and curious fluted bone-beads, both of south Russian type, have been found in Chalcidice associated in a context which is securely datable to about 2300 B.C. Since all the other affinities of the stratum are with Troy II, the source of these objects is South Russia rather than Central Europe. Isolated sherds of Corded ware have also been found in Chalcidice in corresponding strata.

We are at a complete loss to understand what Prof. Childe means when he says on p. 97 that during Danubian Periods III, IV and possibly still in V, Thessaly, Macedonia and the south Danubian region form one continuous province where culture developed on strictly parallel lines. Actually both Thessaly and Macedonia were more or less static but such influences as they did receive were not Northern. W. A. HEURTLEY.

BRONZEZEITLICHE UND FRÜHEISENZEITLICHE CHRONOLOGIE. By NILS ÅBERG. *Teil I. Italien. Stockholm: Im Verlag der Akademie. pp. 216, and 598 figs. 25 kr.*

This is a handsome book, finely printed and illustrated with figures taken principally from Montelius but supplemented also from other sources. It is the first of three volumes, the second of which will deal with Hallstatt. It is to be hoped that in the next volume the publisher will not omit such indispensable adjuncts as an index and a list of illustrations. A little extra sub-editing devoted to headings, divisions and titles of chapters would greatly assist the student.

Prof. Åberg, whose work in various fields of European archaeology is well-known, is a devoted follower of Montelius and pursues the methods of his great countryman with striking success. Typology is his principal instrument and he wields it with extraordinary dexterity. This book is the natural corollary to Montelius' own work on Italy, but it is written with complete independence of view, and with a full knowledge of all the research that has been done in the most recent years.

A brief preface summarizing Montelius' own work was almost superfluous though it is a graceful homage of loyalty. The first chapter after this discusses the starting-points for any absolute chronology, viz. the Mycenaean and Greek contacts. Then begins the application of method, with a chapter of 16 pages which outlines, on typological system, the movement from north to south of the Bronze Age culture in Italy. This is already so familiar to students that it need not be discussed in a review.

## ANTIQUITY

The history of the Terremare and their successors at Timmari, Pianello, etc., is now matter of universal knowledge; and apart from some minor matters of detail the views here given have already met with general acceptance. Nevertheless it is useful to have them so clearly re-stated with such well-chosen and apposite illustrations. The really new and important contribution which this author makes is his strikingly original and unexpected treatment of the Iron Age, especially in its earliest phases. Before studying this the reader will do well to turn to p. 142, in order to familiarize himself with the division into periods, which is quite different both in content and in absolute chronology from the scheme suggested by Montelius. A chart at the end of the book gives these divisions in tabular form. For Central Italy they are as follows:—

First period, from 1000 to 850 B.C.

Second period, 1st section 850 to 750 B.C.; 2nd section 750 to 700 B.C.

Third period, from 750 to 650 B.C.

Fourth period, from 650 to 600 B.C.

The treatment of Central Italy is far the strongest part of the book and is a very valuable addition to our knowledge. The author's general theory, which he supports by ample argument and illustration, is as follows. Just as the Bronze Age was a time during which the fertilizing current of civilization flowed from north to south, so the Iron Age was a time in which this process was exactly reversed, the earliest and most fruitful developments beginning in the south. Central Italy entered at once into the new heritage but the north was late and slow to participate.

Central Italian culture is examined as it presents itself in three areas, viz. Southern Etruria, Rome and Terni. In each of these the earliest Iron Age naturally exhibits various forms which are immediately evolved from the preceding local Bronze Age; Rome indeed has little else. But at Terni and in Etruria, besides the indigenous products, certain new forms begin to appear in the first period, between 1000 and 850 B.C. Notably there are peculiar short swords with T-shaped hilts, and magnificent fibulae of which the disks are engraved with patterns previously unknown. Central Italy then at the opening of the Iron Age exhibits a remarkable mixture of native and foreign elements. It is Aberg's particular merit to have pointed this out and to have identified the source of the foreign infiltration.

The clue was furnished by Orsi's comparatively recent excavations at a site near Monteleone in Calabria. Orsi dated this cemetery of Torre Galli on very well-reasoned grounds to 9th century B.C. Aberg claims it as definitely 10th century, which is quite reasonable, and asserts—which is by no means so certain—that it is the earliest Iron Age cemetery in Italy. Partly as a result of this reasoning he claims that the Iron Age in Italy begins just about 1000 B.C., which has often been suggested before. At Torre Galli there was found a whole series of the peculiar T-hilted swords, some of bronze and some of iron. This then is the earliest place where they appear, and actually they are never found north of Central Italy. They are derived from sub-Mycenaean types and are claimed therefore as imports from the Aegean. Here also at Torre Galli is found the maeander style of decoration which is so prevalent at Terni, while Egyptian scarabs establish the certainty of trade with the Aegean and the Orient. In brief therefore the key to the whole development of the Iron Age is the quickening of the native culture by Aegean influences coming through the door of South Italy, and of this process Torre Galli is at once the proof and the most striking example. It is trade with the Mediterranean, beginning long before Greek colonization, which brings Italy into touch with



## REVIEWS

Greece and the Orient at the very beginning of the Dipylon stage. The author's task throughout the rest of his book is to trace the gradual spread of these foreign influences from one region to another, and to estimate their reactions on the vigorous though somewhat backward native civilization of the same periods.

In the second period of the Iron Age, beginning at 850 B.C., the interest shifts from Calabria and Terni to Southern Etruria. The pre-Etruscan section of this period, dated from 850-750, is very fully treated in what is perhaps the best part of the whole book. It is particularly satisfactory that the author should have greatly enriched our repertoire by working in so much material, hitherto neglected, from the museum of Villa Giulia. The lists of graves which are appended to this as well as to all the other sections will enable the student to test and weigh the author's theory to an extent that is not possible at a first general reading.

The Etruscan period in its two sections 750-700 and 700-650 is sufficiently well treated for a book which cannot go into much finesse of detail. There are many good critical observations, but the ground is so well known that there is little opportunity for novelties of theory. On the whole Aberg's handling is here rather conservative and he has little new to say. All this is a battle-ground over which the factions are still tramping. After the chapter on Central Italy comes the very important discussion of absolute chronology, with which the reader will find it useful to study also the concluding chapter (pp. 208-216) before proceeding to attack Northern Italy.

I could wish that this book had ended at p. 148, for it would have been pleasant to close with an unreserved congratulation to the author on his fine achievement. But it is inevitable that I should protest against much of the matter and method in the chapters dealing with Bologna and Este. These seem to me to give a quite unfair idea of the originality and importance of two great centres of independent development. Moreover they favour, by a very forced construction of the evidence, a scheme of chronology which is wholly unacceptable. In his treatment of the First Benacci period the author is quite orthodox in his chronology, placing the beginning at 1000 B.C. and the end at 850 B.C. But he does no justice to the workmanship of the time, and, by ignoring the fact that the finest engraved bronze girdles occur at Bologna before 850 B.C., he robs that city of the credit for the production of them. We are led indeed to suppose that Bologna was a perfectly benighted region until it was civilized by commerce with Etruria in the 7th century.

It is certainly not easy to decide whether the large vessels of hammered bronze which characterize both the Northern and the Southern Villanovans were first produced at Bologna or in Etruria. But before allowing ourselves to be convinced in favour of Etruria it is well to realize that Aberg's very plausible argument really depends almost entirely upon the assumption that the Bolognese examples are later in date, which is not necessarily true even on typological grounds. The author in fact introduces the new conception of a Third Benacci period of 700-650 B.C. and into this restricted time he proposes to crowd all the finest and most distinctive products of Second Benacci. It is a violent expedient.

My next objection to the Bologna chapter is concerned with the Arnoaldi period. I know of no reason whatsoever for placing the beginning of the Arnoaldi period as late as 625 B.C., and can find none in this volume. This is one of the most striking and certainly the most dangerous of Aberg's innovations. How much of an innovation it becomes evident when the chronology adopted by previous writers is examined. Even Ducati, who always favours minimal datings, has recently placed the beginning of

## ANTIQUITY

Arnoaldi at 650, while all the others, viz. Montelius, Johansen, Sundwall, and I, have preferred something nearer to 700 B.C. with a slight plus or minus. Aberg's statement is that the whole period is so uniform that it is 'scarcely thinkable' it should cover more than a century. The immediate answer to this is that others have found it perfectly thinkable, but neither the one statement nor the other amounts to being an argument. It may be conceded that it is extraordinarily difficult to find any fixed points to which Arnoaldi can be anchored. That it ends at 500 B.C. or only a few years earlier is universally admitted. But the upper limit is quite evasive and seems to be almost at the mercy of subjective opinion. I myself have relied a good deal on the synchronism furnished by the imported gold work of Vetulonia, but it is doubtless true that this *might* have been handed down. Nevertheless, as the only apparent synchronism it should certainly be allowed some value. It seems imperative, especially if he intends to base his Hallstatt chronology on Italian evidence, that Aberg should very clearly and explicitly demonstrate his argument on this very important point. A chapter at the opening of his second volume would surely be very appropriate—and might even convert those who at present see no reason to follow him.

The chapter on Este, which is the least satisfactory in the book, opens with an attack upon the reality of any First Period at Este. I sympathize with the attack, as the general belief in this semi-mythical period has done much harm. But I do not think that the Museum has ever classified tomb 236 as belonging to the First. Actually tomb 236 is of great interest. I have described it elsewhere as not only belonging to Second Benacci but representing the very earliest stage of that period at Este. With it, in any case, must unquestionably be associated several other tombs, from the close similarity of their contents. Consequently there is a small but very well marked group which on my dating would be early Second Benacci and on Aberg's would be 'Third Benacci'. In either event it is impossible for him to maintain that the Second Period of Este contains nothing earlier than Arnoaldi. And when we recall that his Arnoaldi is only to begin at 625 B.C. then surely everyone must agree in refusing to bring down to that date such objects as antennae swords and engraved belts of the Bolognese and Etrurian types! In short there is every reason to think that the beginning of the Second Este period is quite 150 years earlier than the author places it. After this it is a relief to find that the beginning of the Third Period at Este is correctly given as 500 B.C. It is a date as well attested by the evidence as any purely archaeological date can be.

In conclusion it must be made quite clear that my strictures on the treatment of North Italy must not be taken as implying any want of appreciation of the author's book as a whole. It is most valuable, alike for the fullness of its material and for the excellence of a great part of its criticism. There is no student of Italian archaeology who will not need to keep it on his shelves and to refer to it incessantly. D. RANDALL-MACIVER.

A HISTORY OF EARLY CHINESE ART. By OSVALD SIRÉN. Vol. I, Prehistoric and Pre-Han Periods. pp. xiv, 75, with 108 plates. Vol. II, Han Period, pp. xvi, 87, with 120 plates. Vol. III, Sculpture. pp. xvi, 70, with 128 plates. Vol. IV, Architecture. pp. xiii, 77, with 120 plates. *Benn*, 1929-30. £4 4s each; £14 14s the set.

Dr Sirén might easily have called his book 'Chinese Archaeology'. The reason why most writers on Chinese subjects avoid the word is probably that they have hardly any of the sort of data which form its basis in Europe. There is plenty of material;

## REVIEWS

but the student is rather in the position in which biologists would find themselves if they had nothing of bird-life left to study except collections of eggs and possibly the works of Linnaeus and Buffon. Not that the Chinese literature which bears on their subject is half as helpful. A knowledge of the classic language would not have helped Dr Sirén much in compiling these volumes. The first deals among other things with the quite recent discoveries of neolithic pottery ; one bowl (pl. I, c) is of unusual beauty. It has a finish and symmetry equal, for instance, to that of the La Tène period jar (illustrated in colours in the Hercules Read memorial volume) now in the British Museum. Other pieces are obviously connected with the bronzes of the Chou dynasty ; some bear inscriptions. Problems bristle : there are the jade daggers with turquoise encrusted handles, so curiously Mexican in appearance ; there are the analogies between the Chou bronze patterns and the recent art of northwest America. Dr Sirén builds no theories, but suggests many, and the material he presents and discusses is what modern scholars regard as the significant material. The Yin bones are thoroughly discussed. Much space is devoted to the late Chou and Chin bronzes ; and we are grateful for this prodigality. The author has had unique opportunities for the investigation of this group and gives us a variety of types which well illustrates these hitherto little understood styles, which seem to represent the relaxation of the tensely-wound patterns of the strict early designs of Chou. The collotypes are excellent in all four volumes, but in this especially one is impressed by their clearness ; and study is further assisted by enlarged details in several cases.

The second volume introduces us to a fully-developed but rapidly changing civilization, the stable historical China of the Han dynasty. It is here that we begin to meet Scythian art ; this is treated by the author definitely from the point of view of the civilized art of China which it influenced. Dr Sirén clearly emphasizes the difference between this strong but almost clumsy, certainly unresourceful art, and the sculptural inventiveness of the Chinese of this period, regarded by them as their classic age. Our own knowledge of it has enormously increased lately. Dr Sirén is as usual up-to-date in his references to the remarkable discoveries of lacquer, textiles, etc., accessible hitherto only in Japanese publications, and to the fruits of the Kozlov expedition.

Everything almost which is illustrated or referred to in these two volumes has been excavated. It has been the author's task to compare, to assemble, to draw conclusions, and present them ; and this task, despite the difficulties of field-work, often in its absence, he has achieved.

The idea of devoting separate volumes to Sculpture and Architecture respectively is a sound one. In Europe, one is accustomed to look to these very subjects to supply the earliest examples and the most permanent memorials of a country's art. They are usually the first which the student encounters ; they afford, too, the most obvious bridge from archaeology to art-history, and the safest. In China it is otherwise. Sculpture centres round Buddhism, and was coeval with the heyday of that religion, from the fifth to the fifteenth centuries : but neither Sculpture nor Buddhism influenced the Chinese in the same way that Christianity and Hellenic ideals in art influenced Europe, nor was the influence so lasting.

Dr Sirén's work in this field has been exhaustive ; and he here gives us the cream of his researches. His critical ability, tested already in a rather analogous field, that of Italian primitive painting, here proves its worth. Of the volume devoted to architecture it is enough to say that there is nothing else like it, and that only the traveller, photographer, and scholar whose work we are considering could have produced it.



## ANTIQUITY

Architecture, though not, like sculpture, a phase of Buddhist culture, bears only a slight relation to the general art-history of China; its development was independent, and it seems to have changed on the whole less drastically from age to age than other Chinese arts. There is really something here of the mythical 'cycle of Cathay'; certainly the last 50 years, in Europe, have produced more variety in building than all Chinese history. Medieval China still seems to stand and crumble much where it stood: hence the beauty and interest of Dr Sirén's photographs. He also draws interesting matter from Japan, always a hopeful repository of T'ang traditions and too much neglected by students in England.

Surveyed as a whole, the art of China constitutes something even less like a continuum than that of Europe; especially is this true of the later periods, from T'ang onwards, with which Dr Sirén will have to deal, if, on the solid foundation he has laid he ever cares to erect one or two more storeys. But so different is the treatment which these later periods require, that he will perhaps refrain. Pottery for instance, which down to the T'ang dynasty reflects in so informative a way the general art-tendencies of each period, becomes in later dynasties so specialized a subject as almost to justify the existence of those people, christened by M. Vignier 'céramographes', to whom for the most part the British Museum deposes the study of Chinese Art. Our other museum, at South Kensington, deposes it to nobody; but then it is unfortunately so organized that the study of the subjects Dr Sirén so usefully deals with under one head is necessarily divided between three or four separate and very water-tight departments; sculpture, ceramics, metal-work and textiles. There are few if any Englishmen who have had the opportunities necessary to produce such a work, which reflects credit alike on the author and on the Museums and University of Stockholm. W. W. WINKWORTH.

GESCHICHTE DES KUNSTGEWERBES ALLER ZEITEN UND VÖLKER.  
*Band 1. By DR H. TH. BOSSERT. pp. XII, 394, with 28 plates. Berlin: Wasmuth, 1928. 42 marks.*

This work is planned as an encyclopaedia of decorative art, and if the promise and programme of this first volume are followed the editor and publisher will earn heartiest thanks and congratulations from all. Each section is entrusted to a specialist who, having devoted himself to the culture of one definite region, writes with accurate and particular knowledge. They thus form self-contained essays based largely on individual research. They are concisely and clearly written, well printed, and each is furnished with a series of excellent plates. The coloured plates are delightful and the photogravures of Scythic metalwork deserve special praise, as also do the ivories from Mycenae. Some of the composite plates of illustrations selected from various publications suffer from the blocking out process and from the odd assortment of sizes. A marble statuette from Karos appears as large as the throne of Minos. It would have been advisable to give the size of the originals or the scale of the reproductions, since the objects illustrated vary from small brooches to the car from the Oseberg ship.

The first section deals with the Ice Age and is a straightforward summary of man's earliest efforts towards artistic self-expression. Next Dr van Scheltema in fifty pages surveys decorative art in Europe from the Neolithic Age to the La Tène style. This, covering a wide area in time and space, is perhaps too much compressed and could have been more fully illustrated. The Age of Migrations which follows contains some of the finest plates. Specially welcome are the excellent reproductions of fibulae and those

## REVIEWS

showing the amazing woodwork of the Oseberg ship. Dr Boroffka's lucid account of Scythian decorative art is most important, and in it his deep knowledge of the theme demonstrates the wide radiations of Scythic culture from Russia to China and the foreign influences which affected it from time to time. Very welcome is plate XI, which shows two of the stuffs found in Mongolia by the Kozloff expedition. Textiles are so rarely found on ancient sites that it is important to show that the beast style of the metal-work was equally popular in woven and embroidered fabrics. Professor Bosch-Gimpera's account of Spain and Portugal from Neolithic to Roman times places the Iberian style in its right context. The plates of bronzes and painted pottery give an excellent idea of typical designs, the dating of which was once so strangely misunderstood. A short section on Northern Africa is followed by a long and valuable chapter on Italy by Dr Matz who deals in a judicious manner with difficult problems, the early ethnology of Italy, the Etruscans, and the rise of Roman culture. He does full justice to the Etruscans, and does not consider them mere copyists of the Greeks. The Phoenicians are to him in the West Mediterranean as in the East the principal carriers of the orientaling style. The same phenomenon occurred in Greece and in Italy simultaneously. Oriental influence acting on the native Geometric and Villanovan fashions produced in one the orientaling style and in the other Etruscan culture. The Aegean civilization by the editor includes short accounts of Malta and Sardinia. For Crete he disregards Sir Arthur Evans' periods and divides Cretan culture into three stages: early Cretan from 4000 to 1700 B.C. to the destruction of the older palace of Knossos; middle Cretan from 1700 to 1400 B.C., to the destruction of the second palace at Knossos; and late Cretan from 1400 to 1200 B.C., the period that succeeded the downfall of the Minoan kingdom. Otherwise his estimate of the power and quality of Minoan decorative art is orthodox. For Mycenae and the mainland of Greece he adopts the three Helladic periods of their cultural evolution and throughout emphasizes the differences from Crete: 'Es war mehr eine kretische Tünche als ein kretischer Kern in dieser mykenischen Kultur'. He believes that Greeks were already in Greece in 2000 B.C. and racially different from the Cretans in whom he discovers feminine tendencies. Cyprus and the Cyclades are similarly treated and we pass *per saltum* to the South Seas and the East Indian Islands. Their primitive and semi-barbaric culture is an admirable foil to the early history of Europe and the Mediterranean and shows how similar forms of ornament may occur in peoples widely separated in race, space, and time, who can have had no connexion with one another.

A. J. B. WACE.

PHILOLOGICAL STUDIES IN ANCIENT GLASS. By MARY L. TROWBRIDGE. *Studies in language and literature*, vol. XIII, nos. 3 and 4. University of Illinois, 1928 (received 1930). pp. 206. \$1.50.

This admirable and laborious thesis on the ancient Greek and Latin literature relating to glass was written originally for a doctor's degree and then subsequently enlarged to its present size of 206 pages. The authoress has made a very large collection of classical passages on this subject, which, if not exhaustive, contains all important references down to the fourth century A.D., a work of great value to those interested in the early history of glass in Greece and Rome. So thorough is it in its use of classical quotations that it is, perhaps, unfortunate that, of set purpose, 'no attention is paid to the literature of other nations, Egyptian, Babylonian, and the like', because it is now becoming more and more obvious that numerous words were brought into the Greek

## ANTIQUITY

language from the Near East, probably by traders, not only for natural products, from myrrh to mandragora, from marcasite to misy, but also for the discoveries of the early Assyrian chemists (for example : aventurine glass (*abnu*) *sandu markhashitu* 'spangled red mineral') which is found in Pliny as *sandrasitae*. For this reason the authoress would have found a derivation for *kyanos* ('as yet the etymology is unknown') in the Assyrian word *uknu*, lapis lazuli, and blue glaze, long ago suggested by Jensen. Apart, however, from such small criticism as this, the book deserves all praise for the painstaking care which has obviously been bestowed upon it. It is a most handy book of reference to the classical authors' writings on the subject.

R. C. THOMPSON.

### ANGLES, DANES AND NORSE IN THE DISTRICT OF HUDDERSFIELD.

By W. G. COLLINGWOOD. *Tolson Memorial Museum publications, handbook 2. Second edition. Huddersfield, 1929. pp. 62, illustrated. 1s. and 1s. 3d.*

Mr Collingwood's authorship of this useful and interesting guide to the stone monuments of the Huddersfield district was in itself a sure guarantee for the need of a second edition within a few years of the appearance of the first. Fulfilment of this need has given the author an opportunity to revise and add to the original text. A frontispiece in colour of the Berhtsuith cross at Thornhill serves to remind us that to the Angles as to other peoples in antiquity the stone from which the crosses were carved was merely a material more permanent than wood and had for them no aesthetic attraction of its own. Indeed in the earlier periods the lasting monuments raised to the dead, notably the Dewsbury cross, seem to echo the richly carved and painted woodwork which we know adorned the houses of the living. In the later monuments the growth of stone-building makes itself apparent. The sure touch of the wood-carver is temporarily lost in the first efforts of an as yet comparatively untried school of masons.

E. T. L.

ETRURIA PAST AND PRESENT. By M. A. JOHNSTONE. *Methuen, 1930. pp. xv, 246, with 15 plates. 7s 6d.*

The only unsatisfactory thing about this book is its portentous title. 'Etruria past and present' suggests folios the size of Dempster and learning as ponderous as the erudition of the Emperor Claudius. Actually we have before us a light and prettily illustrated little octavo written in a very pleasing popular form.

The authoress makes no pretence to originality but she has studied carefully and systematically under good masters, has travelled over a great deal of the country and read every book which bears upon any aspect of her subject. The result is a very good example of what this kind of popularization ought to be. As an introduction to a fascinating study in which all intelligent people ought to be interested *Etruria past and present* may be warmly commended. It will teach the novice nothing about *present* Etruria, which in any case he will prefer to estimate for himself, but a great deal about ancient Etruria and its inhabitants. All the information is perfectly trustworthy and there are no inaccuracies or careless statements. The descriptions, moreover, are remarkably complete, and the authoress deserves a word of special praise for including references to specimens in the British Museum. In a second edition a few superfluous pages of sentimental reflections and the fortunately brief chapter on Etruscan children might be omitted. Except for these the book maintains throughout a dignified style which is well adapted to its matter.

D. RANDALL-MACIVER.



## REVIEWS

A HISTORY OF GREECE. By CYRIL E. ROBINSON. *Methuen*, 1929. pp. 380, with 33 illustrations, and 23 maps. 7s 6d.

EVERYDAY THINGS IN HOMERIC GREECE. By M. and C. H. B. QUENNELL. *Batsford*, 1929. pp. VIII, 140, and 73 figs. 7s 6d.

It is rare to find a textbook, designed for the upper classes of schools and for university students, which is as enjoyable to read through as a novel, but this is true, *experto crede*, of Mr Robinson's *History of Greece*. Thoroughly up-to-date, it deals with the subject from a modern point of view, that is to say that, where it is possible, reasons are given for historical phenomena, and when this is not suitable, the narrative is terse and arresting. From end to end the reader is sustained by a feeling of confidence in both the accuracy of the writer's knowledge and his sense of proportion. The final chapter on 'the Hellenistic Age and After' gives a glimpse of the routes by which Greek thought and art have reached the later world. The photographic illustrations are delightful, but the end paper giving a diagrammatic view of ancient Athens is misleading. It is taken, we are told, from Mount Lycabettus, a fact which does not convey much topographically to the average reader; the points of the compass are not given, and so the Piraeus appears to the north of the city. This false impression may remain with the less observant of the book's youthful readers. The maps and plans and chronological tables are good. There are small misprints on page 93, line 30, and on page 114, line 5. Plate XIX is bound opposite page 206 but its explanatory note is printed at the foot of page 260.

The new Quennell book is pleasant to handle, and many of the illustrations are even better than we have been taught to expect from the authors. The book begins very abruptly with a description from Apollonius of the Argonauts and their expedition. This is really not Homer, and might have been omitted. Next the Iliad and Odyssey are summarized book by book with comments. This plan spoils the story, and does not leave a clear impression of the chief incidents. The translation is not particularly pleasing: for instance, 'Eros took the opportunity to quickly string his bow and fit an arrow from his quiver, and shoot at Medea'. The last chapter deals in a very disjointed way with things: buildings, ploughs, looms, ships. Here the authors are on their own ground, and are at their best, and the descriptions and illustrations will help many people, both the young and others well past school age, to understand the material civilization of Homeric times.

This book, however, fails to give the atmosphere of the Homeric poems, and leaves an uneasy feeling that the authors are not quite sure of their ground. Their inability to understand the primitive nature of the period is evident from such remarks as the following (p. 31):—'This is an extraordinary thing, that Homer could have thought of a God as so human that he bellows out loud when he is wounded'. Yet the gods of an age long after Homer were still considered capable of weaknesses quite as human as this. Again 'the combatants, like the men in our own great war, fought, not because they loved fighting, but because fate drove them on'. But the Homeric word for battle means 'joy'. Finally, 'We have come to think of an acropolis as a sacred place, whereas the word only means city on high'. 'We' here must surely be limited to the authors, for throughout Greek history the acropolis is the fortress hill of the city, not necessarily the sanctuary. In the description of the Lion-gate at Mycenae the pillar between the lions is alluded to as though it were an unimportant ornament instead of the emblem of a cult.

## ANTIQUITY

The architectural sketches and reconstructions are ingenious and interesting, and real beauty is achieved in some of the former. The book will be very useful on the shelves of the school library. If the authors will read Mr Robinson's book their next volume should greatly benefit.

DINA PORTWAY DOBSON.

A BABYLONIAN CITY IN ARABIA. By R. P. DOUGHERTY. *American Journal of Archaeology*, 1930, XXXIV, 296-312.

This is an article of a kind that might be written far more often. It is a summary of what is known about the oasis of Teima in Arabia. Teima lies between the Great Nefud on the northeast and Medain Salih (on the Hejaz railway) on the southwest. It also lies exactly midway between Damascus and Mecca, between the 27th and 28th parallels of latitude. Politically it is now under the control of Ibn Saud, ruler of the Hejaz. It has only been visited by seven Europeans, the first in 1848 and the last in 1909.

Professor Dougherty summarizes the scanty archaeological knowledge we possess, proves that Teima was the seat of the Babylonian court for part of the reign of Nabonidus (king of Babylon, 556-539 B.C.), who conquered it, and expresses the hope that so promising a site may be more thoroughly explored. The difficulties of excavation there might at present be considerable, but surely someone could make a rapid reconnaissance, photograph the ruins and bring back specimens of the pottery and flints that are said to cover the surface? Teima can be reached by taxi from Ammam in Transjordan.

LES FOUILLES DE HADDA. Par J.-J. BARTHOUX. Vol. III, Figures et figurines, album photographique. *Mémoires de la Délégation archéologique française en Afghanistan*. Paris: Van Oest. pp. 26, 112 plates. 380 francs.

We are informed by the publisher of these *Mémoires* that volumes I and II of this series will not appear until the end of 1931. Volume I is to contain the text which will discuss the dating of these singularly beautiful and interesting monuments. Meanwhile the English reader may welcome a few particulars concerning the site which produced them.

Hadda is a village about five miles to the south of Jelalabad. It is the Hsi-lo (Hela) of the Chinese pilgrims. Hela was celebrated for its oracle, which the famous traveller Hsüan-tsang himself consulted (at the price of five pieces of gold) when he passed through the town c. A.D. 630. The history of the district is a complicated one. The Kushan (Indo-Scythian) kings continued to rule there after they had lost their footing in India proper, that is to say, from about A.D. 320. They were driven out at the end of the fifth century by the white Huns (Ephthalites), who are known to have been violent opponents of Buddhism. It is usually assumed that the stupas and monasteries of Hela were destroyed by the White Hun king Mihirahula about 530. We only know for certain, however, that he persecuted the Buddhists; we have no particular information concerning the fate of Hela. As confirmation of this supposed destruction European writers quote the statement of Hsüan-tsang that 'the stupas are in a state of neglect and decay'. A careful reading of the passage in the original shows, however, that this statement is meant to apply, not to the stupas of the kingdom of Nagarahara in general (thus including Hela, which was dependent on this kingdom) but only to the stupas of the city of Nagarahara, the capital.

The popularity of the oracle and of the Buddha-relics associated with it had established Hela as the local headquarters of Buddhism, at the expense of Nagarahara, when

## REVIEWS

Buddhism was weak, but Hinduism flourishing ; for in this moderate-sized town there were five Hindu temples.

The White Huns were driven out about 560, by the Sassanian rulers of Persia, and despite a succession of Moslem attacks, ruled at Kabul till about 871 when they were finally ousted by the Mohammedans.

The present album, consisting almost entirely of detached heads, is typical of the art that flourished under the Kushan rulers, wherever they appeared. Of this art we have two main phases: (1) 1st century B.C. to 3rd century A.D. with its centre in Gandhara proper; (2) 4th to 6th century, with its centre in Afghanistan, where the Kushans continued to rule after they had been expelled from India proper by the native Gupta dynasty.

It would seem at first sight that the figures of the present album belong exclusively to the second phase. There is however, the possibility of a third phase, extending from the expulsion of the White Huns (c. 560) to the fall of the Kushans (c. 871). Whether any of the objects here figured belong to this third period is a question that will be discussed in the introductory volume.

It is known that M. Barthoux carried on his extremely interesting researches under conditions of great difficulty, owing to the fanatical opposition of the local mullahs. It is to his courage and determination that we owe the present volume, as also the possibility of studying the Hadda finds at present exhibited in the Musée Guimet. A. WALEY.

HELLENISTIC CIVILISATION. By W. W. TARN. *Second edition. Edward Arnold and Co., 1930. pp. 334. 16s.*

The fact that a learned work, first published in 1927, has already gone into a second edition, proves that it has many qualities beyond mere learning to commend it. A detailed review in this case is unnecessary, but for the benefit of those who have not seen the first edition we may draw attention particularly to the Historical Outline (ch. 1) which deals in a masterly way with the difficulties of the period from Alexander's death to 31 B.C., and the story of the contacts between Hellenism and the Jews (ch. vi). The book's value is greatly increased for the student by the inclusion, in this edition, of footnotes,\* in the briefest possible form, giving the sources of statements in the text. To take a single instance, the statement as to the prevalence of infanticide in the Greek cities is absolutely convincing in view of the documents thus cited. Apart from the notes, and a few minor corrections, the second edition is practically the same as the first.

F. J. DOBSON.

THE COTTAGES OF ENGLAND : a review of their types and features from the 16th to the 18th centuries. By BASIL OLIVER. With a foreword by STANLEY BALDWIN, M.P. *Batsford, 1929. pp. xxiv, 91, with 99 plates, and 38 figs. in text. 21s.*

This is not only a beautiful book but an important one, for it deals with a subject which has not been treated as a whole before, though the cottages of one or two counties have been separately described. The stone houses of the Cotswolds, the Cornish granite, the cob-walls of Devon and Dorset, the timber-framed cottages of Hereford, Salop and East Anglia, the use of brick and flint in Norfolk and Suffolk, the plainer and harder work of the Northern counties, all these and many more are described and admirably

---

\* We would like to draw the attention of all other publishers to this fact.—EDITOR.



## ANTIQUITY

illustrated. And the various styles are not merely described: the reason for their prevalence in any district is given, the methods used in their construction are explained, and the peculiar features and details proper to each district are dwelt upon. There are dissertations on the making of cob and mud walls, on plastering and pargetting, and more especially on thatching, which are of great practical value.

In Mr Baldwin's words, we can 'only hope that this volume will find its way into the hands of as many as possible of those who have to do with the maintenance, preservation or creation of cottage buildings throughout England, whether they be architects, builders, landlords or just ordinary folk'.

ED. H. GODDARD.

MUSÉE ARCHÉOLOGIQUE LIÉGEOIS: catalogue sommaire de la section pré-historique. By J. SERVAIS and J. HAMAL-NANDRIN. *Liège*, 1929. pp. 148.

In a recent number of ANTIQUITY (IV, 255) the Editor drew attention to the importance of the Musée Curtius at Liège. Since his visit an excellent Catalogue of the Museum by J. Servais (Keeper) and J. Hamal-Nandrin has been issued with the aid of a subvention from the city at the low price of 12 francs. The work begins with an unusually clear and well-balanced summary of prehistoric periods in which full value is assigned to the East Anglian evidence for Pliocene man, and the independence of Tardenoisian as the culture of an epoch is properly queried. In this section, and elsewhere, a number of important specimens in the private collection of Hamal-Nandrin are figured. The description of the Museum cases that follows this introduction is admirably designed to elucidate to the visitor all points not explained by the exceptionally instructive labels attached to each. The full descriptions and 455 illustrations make it, however, eminently useful also to those who are not fortunate enough to be able to visit the Museum itself. Of special interest are the comb used for decorating Omalian (Danubian) pottery, the very British-looking leaf-shaped arrowheads and the palaeolithic remains from the famous cave of Spy. In short, here is a model guide both from the standpoint of the native layman and the foreign student.

V. GORDON CHILDE.

THE LANDS OF THE EASTERN CALIPHATE: Mesopotamia, Persia and Central Asia; from the Moslem Conquest to the time of Timur. By G. Le STRANGE. 2nd impression. *Cambridge*, 1930. pp. 536, and 10 maps, 21s.

A reviewer must first express his thanks to the publisher for reprinting this invaluable handbook. It is just a quarter of a century since its first appearance, and it had become difficult to secure copies. The very short list of emendations published is a fine tribute to the scholarship of the author, and shows that for once a reprint of the original, without alteration of pagination or maps, is fully justified.

The book is an encyclopaedia of geographical information, derived from original and often untranslated Arabic writings. It surveys the world of the 'Arabian Nights'—and much more besides—extending from the Mediterranean to the Indus and from Turkestan to the Persian Gulf and Arabia. It was a world that basked in the sunlight of civilization at a time when our's was clouded by the Dark Ages. While Alfred was struggling with the Danes, the Caliphs were laying out palaces at Samarra on a scale and in a style which has never since been achieved. Although the blight of Islam, the tyranny of the Written Word, inhibited that civilization, yet it reached a height greater than any since attained in that area. The picture of the whole which we form in our mind after reading this book is one of a large region rejoicing throughout in a high

## REVIEWS

degree of material prosperity. It is a world that has vanished almost completely, leaving hardly a trace behind except such as may be found by the archaeologists of the future (for only a very few of those past and present have studied it). The Mongols of the 13th century wiped it off the map. To all who are not specialists in Oriental Studies it is almost an unknown world, for the original sources are both inaccessible and difficult to master even in translations. It is not until the ground is cleared, in a geographical sense, by one of our own time and culture that we can begin to understand it. To such the present book will be an indispensable companion. Would that someone would compile similar handbooks for the rest of the Arab world! One for Arabia is badly needed, and the material exists in abundance.

**HORACE'S SABINE FARM.** By PROF. GIUSEPPE LUGLI. *Translated by GILBERT BAGNANI.* Rome : *Via Dora* 1, 1930. pp. 71, with 15 plates and 2 maps. 8 lira.

All lovers of Horace, all teachers of Classics and all Roman archaeologists should welcome this little book. The author gives a short account of the search for the exact site of the villa, from the 16th century onwards. He describes the valley of the Licenza, the scenery round the house and the features of the beloved farm—its woods of elm and oak, its pastures and cultivated fields, its spring of water, its gardens, orchard, vineyard and olive grove—all illustrated by quotations from the poet, as well as by a map of the district, prints and photographs. The excavations carried out by the Italian Ministry of Public Instruction in 1911 and two years later are concisely and clearly described, with a plan of the villa, and numerous illustrations of the remains of the building and of the fragments of frescoes, pavements and other objects found *in situ*. All goes to bring before one a picture of the airy well-planned house, the bright and shady gardens, and the beautiful surroundings which the poet loved so well.

J. WILLIAMS-FREEMAN.

**JULIAN THE APOSTATE.** By W. DOUGLAS SIMPSON. *Aberdeen : Milne and Hutchinson*, 1930. pp. 127, and 5 plates.\* 7s 6d.

Because he opposed their religion, Julian has for centuries been abused and vilified by those who call themselves Christians. Even the word 'apostate' has acquired an unduly sinister connotation, suggesting a state of more than ordinary wickedness. Conversely, Constantine, who killed his son and scalded his wife to death, is generously described as 'the Great'. It is only within recent times that historians, released from intellectual bondage, have been able to exercise their free and independent judgment without fear of abuse, or worse; and even this freedom is sometimes threatened when current events are involved. Julian was not, perhaps, one of the greatest characters in history, but he was certainly not a monster. Had he not been cursed with what Mr Simpson calls a 'Messianic' temperament, he would have gone down to history as an exceptionally talented general and administrator. He lived in a phase of civilization which was not suited to his peculiar gifts, and consequently he failed in what he regarded as the main purpose of his life; but his failure was merely that of supporting a lost cause. It is interesting to speculate upon which side he would have been found if he were born again today.

Mr Simpson has written an admirable and scholarly monograph which will be read with pleasure by all who care for historical biography.

---

\* Almost simultaneously there was published *La Vie de l'Empéreur Julien*. By J. Bidez. Paris (*Les Belles-Lettres*). pp. x, 408. 25 francs.

## ANTIQUITY

THE SAXON CHARTERS OF WORCESTERSHIRE. By G. B. GRUNDY. Part I. Transactions of the Birmingham Archaeological Society (1927), 1929, vol. 52, part 1, pp. 1-183.

The county of Worcester is very rich in charters with appended boundaries, largely owing to the fact that in the 11th century transcripts of the Priory charters were made by the monk Heming, and that these have come down to us in the Cotton Collection in the section Tiberius, B.13. There are nearly 50 of these charters, and the remaining land grants with boundaries—these for the most part unconnected with the Priory—bring up the whole number of extant boundary charters relating to lands within the county to about 100. These give details of some 90 land units, having a total area of more than 200 square miles out of the 750 square miles which is the area of the ancient county of Worcester.

Dr Grundy therefore, in undertaking the identification of the boundaries attached to these Worcestershire charters, has had material which has enabled him to deal with land units covering rather more than one quarter of the county. As would be expected from his papers on the Hampshire and Wiltshire charters in the *Archaeological Journal*, he has given us what are in most cases convincing identifications of the pre-Conquest boundary marks with places and sites shown on modern large-scale maps, or topographically identifiable by reference to existing physical features.

The charters dealt with in this volume concern places in the county from Abberton to Mangersbury, with a few omissions, which will no doubt be supplied when the second half of the alphabet is published. Seven Gloucestershire charters are included, and this is a matter of some regret if it indicates that Dr Grundy has no intention of giving us an exposition of the boundary charters of that county in a separate communication, which would deal with all the 45 charters that are extant. These are in no way of less interest than those in the Worcestershire collection, and one might also plead for the inclusion of the few Warwickshire charters relating to land units within the ancient diocese of Worcester.

A number of the sets of boundaries investigated by Dr Grundy follow existing lines of demarcation more or less exactly, and do not present many serious difficulties in the determination of the location of the points given in them. But there are not a few in which the lines cut across existing boundaries, and often contain not a single name which is recognizable as a survival of a pre-Conquest appellation. As an example of the skilful and painstaking way in which Dr Grundy has dealt with such cases attention may be called to his treatment of the Wearsetfelda charter (Birch, 455).

The elucidation of these Worcestershire boundary charters not only renders the greatest service to those who are interested in the topography of the county, but, as Dr Grundy remarks in his introduction, it provides much material for the social and economic history of England during the pre-Conquest period.

F. T. S. HOUGHTON.

PERU FROM THE AIR. By LIEUTENANT GEORGE R. JOHNSON, with text and notes by RAYE R. PLATT. *American Geographical Society, New York*, 1930 (publication no. 12). 150 plates. Price not stated.

We put this book down, after reading it, with the conviction that it marks an epoch in the dissemination of geographical knowledge. The series of air-photographs of Peru published in it give one a better idea of Peru than anything else could, short of an actual visit. In future students of geography will learn about the physical characters of a region



## REVIEWS

by consulting albums of air-photographs. There is needed only to supplement it an Atlas (such as that of Finland, for example) giving what an air-photograph cannot give—the distribution of certain things over a large area.

There are some surprising views of Inca palaces which, with their rectangular lay-out, have a strangely modern look. They are revealed by the same shadow-process as the ruins of Samarra which, in a distant way, they resemble. One longs for vertical rather than oblique views of them, though recognizing the advantages of an oblique view for books like this. We are informed by the same Society that further photographic work is being carried out, with special attention to such ancient sites.

The photographs are altogether admirable, and reveal a high degree of technical efficiency, as well as a sense of pictorial fitness. The publication of such an expensive book reflects the utmost credit on all concerned. We should like particularly to congratulate the American Geographical Society on its enterprise in this direction. Is it not about time that something of this kind was produced within the British Empire? So far we have neglected all our opportunities.

PREHISTORIC MALTA: the Tarxien temples. By Sir THEMISTOCLES ZAMMIT.  
*Oxford University Press, 1930. pp. 143. 12s 6d.*

Sir Themistocles Zammit has carried out a great work in Malta. He had already earned the gratitude of all students of the megalithic cultures of the Mediterranean Basin and their distant offshoots in Britain and elsewhere, by the prompt and periodical publication of the results of his excavations on the Tarxien temples. Now he has added to the debt by collecting and summarizing his results and publishing them in a more accessible and popular form.

The importance of the work recorded is so great that it is justifiable to point out certain blemishes in its presentment (for some of which the author may not be responsible). Many of the photographs are not worthy of their subjects and do not compare favourably with those published in *ANTIQUITY* in March 1930: e.g. plate III, fig. 3, which has been so badly touched up as to destroy its value as a record. The plan is inserted in such a way as to make its use as inconvenient as possible and it is on much too small a scale. It is made more confusing by the use of outline only to indicate both paving and 'vertical' stones, while 'horizontal' stones (sometimes used as paving) are shaded. The position of the 'small court J' (p. 19) is not indicated. The maps on pp. 2 and 3 are on the same scale, and contain practically the same information, but contradict each other in detail—e.g. the position of the Cordin buildings and the extent of the Misida creek.

The student receives a slight shock when he reads that 'in Malta, as everywhere else in Europe, the Bronze Age period represents a decadence from the Neolithic' (p. 121), and he is not comforted when he finds that one of the two references supporting this statement is Mr Massingham's *Downland Man*.

Throughout the book Sir Themistocles calls the earlier of his two periods 'Neolithic', and the later 'Bronze Age', without qualification; but, accurate as these terms may be from a purely local standpoint, they will not bear the test of wider application when an attempt is made to relate the Maltese cultures to the development of Mediterranean civilization as a whole. In this connexion we naturally turn to Crete and find that Sir Arthur Evans has collected irrefutable evidence of Minoan influence on the Maltese monuments of Sir Themistocles' 'neolithic' period, while the Aegean relations are equally clear: Sir Arthur's conclusion is that these external connexions lie 'well

## ANTIQUITY

within the limits of the Chalcolithic age in the Mediterranean region'.\* Moreover a study of the photographs illustrating the recent article in *ANTIQUITY*, particularly plate VIII, makes it scarcely to be believed that a metal tool was not employed to dress some of the stones.

The importance of this book is such that we ask for more information ; especially for structural details of the buildings which might elucidate their connexion with other probably cognate monuments such as the navetas of the Balearic Islands, and the Giants' Graves of Sardinia. We should especially like to have the complete plan of the fore-courts at Tarxien and elsewhere, and also to know more about the extent and nature of the 'boundary' walls.

W. J. H.

### DAS STADTBILD JERUSALEMS AUF DER MOSAIKKARTE VON MADEBA.

By PROF. DR PETER THOMSEN, Dresden. *Reprints from the Zeitschrift des Deutschen Palästina-Vereins* for 1929 (vol. 52), pp. 149-174, 192-219, 290-310.

Professor Peter Thomsen has been editor of the *Palästina-Jahrbuch* for many years, and there can be few, if any, who are better acquainted with the literature of research in Palestine. How extensive the literature is will be evident to anyone who glances at the references with which he has documented this study of the picture of Jerusalem on the mosaic map at Madaba.

Two of the earlier sections of the work before us are devoted to a discussion of the position of the mosaic in question in the general history of cartography and in the history of representative art, and it seems to us that Professor Thomsen has defined the position very happily and very truly. The map belongs to the latter half of the 6th century, and it shows that there was no decline at this period. Byzantine cartography, on the contrary, represents the perfection of previous Roman and Hellenistic efforts, and when one compares this map with the Peutinger Table, for example, and considers at the same time the intractable material in which it is executed, one cannot but endorse Professor Thomsen's judgment.

The Madaba map is of inestimable value and interest to us, but the mosaics which we have found at Jerash lead us to question whether Professor Thomsen may not in the later sections of his work have exaggerated the contemporary significance of the map. In these sections the author discusses the artist and his sources : the artist he identifies with a certain Salamanus whose name appears apparently as that of the maker on a mosaic in a church dedicated to the Apostles in 578-9 near the southeast gate of Madaba. His grounds for the identification are, briefly, that Salamanus must have been a famous mosaicist, otherwise he would not have signed the mosaic in the Apostles' church ; the map must have been also very famous and would certainly have been mentioned by pilgrims if it had not been too late in date for those who visited Madaba to have seen it ; and that, lastly, the style of the two mosaics is very similar. Only the last point is really decisive and we next ask, are the two mosaics really so much alike ? Professor Thomsen does not give any evidence on this point : he has only paid one hurried visit to Madaba himself and he does not refer to any adequate illustration of the Apostles' mosaic which would enable one to form an opinion. Elsewhere, unfortunately only in a footnote (p. 163), he refers to the absence of any comprehensive work on the mosaics of Palestine and Syria. Comparatively few of them have been adequately published in colours or in photography, and until a proper series is available for study one can hardly be too cautious in dating mosaics on stylistic grounds. Is there any archaeologist today

---

\* *Palace of Minos*, II, 1, § 2.



## REVIEWS

who would agree with De Rossi in his controversy with Renan about the date of the Kabr Hiram mosaics?

Professor Thomsen conjectures further that Salamanius was a monk, in all probability, practising in later life a craft which he had acquired in his youth and depicting the Holy sites and places of pilgrimage as he had learnt to know them on his own travels. If the good Salamanius was a monk it is a curious thing that he did not mention it on his inscription, and as to his source we imagine that it was not his own travel-notes but a book of patterns compiled for the use of church decorators. At Jerash we found two series of topographical pictures. In SS. Peter and Paul's, a church which was built probably in the first decade of Justinian's reign, there were pictures of Alexandria and Memphis; in S. John Baptist's, which is dated 531, there was another view of Memphis on the south side of the church, and on the north side another view of Alexandria and two places we are disposed to identify with Canopus and the shrine of SS. Cyrus and John (see *Illustrated News*, 23 November 1929). These views differ slightly in detail but obviously go back to a common original, the author of which, like the author of the Madaba map, was only interested in ecclesiastical buildings. The tremendous amount of church-building at this time led, we suppose, to the production of a number of pattern books specially arranged for church works, and the original of the Madaba map is to be looked for in one of these. And in this case, of course, it would not have seemed so precious to contemporaries as it is to us, nor need we suppose the maker to have been a famous artist.

The longest and most valuable section in Professor Thomsen's paper deals with the details of the plan, or picture, of Jerusalem and the identification of the various buildings there portrayed, and it is illustrated with an admirable coloured reproduction of a painting by Father Mauritius Gisler. Apart from the towers, gates and streets, there are thirty-five buildings to be identified in a mosaic which measures only 54 by 93 centimetres, and the fact that three masters of the topography of Jerusalem such as Professor Thomsen, Père Abel and Father Gisler, are agreed as to the identification of the majority of these is a fine testimony to the skill of the mosaicist. It also shows on what a solid basis our knowledge of post-Constantinian Jerusalem rests, compared with the flimsy grounds of our knowledge of the pre-Christian city, and this although there is not much more left above ground of the city of Justinian than there is of the city of Herod. From the topographical standpoint the most important identification is that of the 'New church of the Virgin-Mother', dedicated by Justinian in 543, which was not in the courtyard of the Haram where the mosque El Aksa stands, but to the southwest of this. Its representation on the map is an indirect confirmation of the date of the mosaic.

We are not convinced by the arguments put forward by Professor Thomsen as to the name of the mosaicist, but the section which is concerned with this is one of the shortest sections in the two articles, and the remainder of the study fills us with feelings of profound admiration. Professor Thomsen has laid all who are interested in the Holy Land under another deep debt.

J. W. CROWFOOT.

THE MINES OF MENDIP. By J. W. GOUGH. *Oxford University Press*, 1930. pp. x, 270, with 2 maps. 15s.

Cornwall excepted, no area in the southern half of England shows clearer traces of bygone mining operations than the Mendip Hills, but although the lead mines inseparable from the name of Mendip have only ceased to work within living memory and are of



## ANTIQUITY

immemorial antiquity, no connected account of their history has been available until now.

There is no direct evidence of pre-Roman lead mining on Mendip, though the numerous traces of the metal found in the Glastonbury lake village show that it was certainly mined, but with the Romans an intensive activity started in the Charterhouse region as early as A.D. 49—a date attested by the earliest known Roman inscription in Britain cast on a pig of lead found in that neighbourhood. There is some doubt as to the precise methods adopted by the Romans, but it is probable that they smelted their lead on open hearths.

Their process was so wasteful that about 20 per cent of the lead was left in their slag, though this may be accounted for by the probable economy to them of partially smelting a profusion of rich ore.

Cupellation of the lead for silver was also carried on. It is a matter for regret that the site of the Roman lead works has never been systematically examined, for there is ample evidence that a fair-sized community centred round them, and the meagre information available has been collected in a casual way through an early visit to the site by Colt Hoare and Skinner, finds made in farming the land, and in re-smelting the Roman slag heaps.

It is probable that mining activity declined after the time of Marcus Aurelius and no big exploitation of the Mendip ores was to take place till the 16th century. Mining was certainly in progress during the Middle Ages and may even have been carried on feebly by the Anglo-Saxons, but the main object of the lead industry in the medieval period was the production of silver.

The constitution of the mining industry began to emerge with the division of the area into four regions under Lords Royal, who probably gained their privileges between 1366 and 1386 through the removal of the forest rights of the king. With these came in the custom of the payment of 'lot lead' by the miners—a tenth of all the lead produced. It has long been a belief that a definite code of laws governing the conduct of the industry was the outcome of the 'Great Debate' held at Green Ore under the presidency of 'Lord' Chocke in the reign of Edward IV, but the author shows that this was more probably concerned with the regulation of grazing rights, and that no codification may be looked for before the reign of Elizabeth. Although Mendip was a free mining district governed by a special local constitution and exploited by working miners the appearance of democracy was unsubstantial because the organization made definitely for the profit of the Lord Royal, and the mineral courts were for all practical purposes manorial.

An alliance between German technical knowledge and English capital gave a great impetus to all forms of English mining in the 16th century and Mendip felt its influence so much that the most prosperous period in the history of the area set in, reaching its climax in the years following the Restoration. After that the primitive methods of the miners rather than the exhaustion of the ore caused a steady decline.

The chief enemy of the miner was water, which filled his 'rake' before he had followed the ore to any great depth, and the configuration of the hills as a plateau with few marked irregularities on the summit made the cutting of lateral drainage adits impracticable. It is not surprising, therefore, that twice in the 17th century determined efforts were made by two engineers, Bevis Bulmer and Bushell, to devise a successful drainage scheme, but in each case the venture was a failure, to which the obstructionist tactics of some of the miners contributed.



## REVIEWS

Fire was the only device used for splitting rocks till the very late days of the industry, and the primitive nature of many of the other processes may be judged from this.

It is interesting to learn that the notable absence of inns on the upland of Mendip which is apparent at the present day is ultimately due to the suppression of public houses by the order of James I for the discouragement of the violence and riot for which the miners were notorious.

In the 18th century the decline was rapid. Capital fought shy of the mines, new methods were wanting, and the exhaustion of readily accessible ore threw the miners back upon the re-smelting of the old slag heaps. Even then the value of the lead recovered was steadily lowered by a progressive decline in the price of the metal in the face of foreign competition, but the advent of machinery and more efficient furnaces tempted several persons to try a revival of activity in the latter half of the 19th century. The record of these attempts is one of almost unrelieved failure and provides little more than the leading case of *Hodgkinson v. Ennor* about the pollution of the water from the St. Cuthbert's lead works near Priddy which, sinking through the hills, came out of Wookey Hole and interfered with the processes at the plaintiff's paper mills.

Severe handicaps imposed on the washing of the ore by an adverse decision, and a continued fall in the price of the metal, proved fatal to all these enterprises save one. The Roman slag heaps at Charterhouse were re-smelted at a profit which was enhanced by the use of the Pattinson process for the economical recovery of the silver content of the lead.

Mr Gough completes the history of Mendip mining by describing the calamine industry, which enjoyed a fair prosperity during the 18th century, first on the high ground north of Wrington, and later round the villages of Rowberrow and Shipham, and also by recounting the efforts, all futile, to mine for manganese, iron, copper, and coal.

The author is to be congratulated on a very painstaking and readable piece of research.

C. W. PHILLIPS.

**WILTSHIRE BIBLIOGRAPHY:** a catalogue of printed books, pamphlets and articles bearing on the history, topography and natural history of the County. *Compiled by* CANON ED. H. GODDARD, F.S.A. *Published by the Wilts Education Committee.* 1929. pp. VIII, 276. 4s 6d.

For many years Canon Goddard has carefully recorded in the *Wilts Archaeological Magazine* very full annotated lists of current literature relating to Wiltshire. He has even included obituaries from the local press, ensuring in the majority of cases a source for biographical information which would otherwise be difficult to find. Besides this he had prepared in manuscript (in 5 volumes) a bibliography which included earlier books and references relating to the county, one copy being deposited in the Devizes Museum and the other in the library of the Society of Antiquaries of London. Use which could be made of this manuscript list was therefore limited, but fortunately the value of Canon Goddard's labours has been recognized by the Wilts County Education Committee and it is now in print, though owing to the cost of production it has been necessary to omit references to various publications and certain bibliographical information. While we regret it was not possible to issue the work in a form which would compare with the well-known volumes relating to Gloucestershire, Somerset and Cornwall, it is a most welcome addition to county bibliographies and one which cannot fail to be of use to those interested in local history.



## ANTIQUITY

THE ANCIENT BRIDGES OF THE SOUTH OF ENGLAND. By E. JERVOISE, A.M. INST. C.E., on behalf of The Society for the Protection of Ancient Buildings. With an introduction by C. R. PEERS, Chief Inspector of Ancient Monuments. *The Architectural Press*, 1930. pp. xvi, 128, with 79 illustrations. 5s 6d.

The tremendous increase in motor-traction is affecting the amenities of towns and the peace of rural areas, and with the widening of roads many of the structures which carry the latter over rivers and streams are in danger of destruction. Our older bridges were not built to sustain the loads which fill the enormous transport-lorries using the highways and this, combined with the widening of roads which is in progress everywhere, seals the fate of many a picturesque bridge. Modern engineers think in steel and concrete, and in spite of public outcry they more often than not have their way and one more example of brick and stone construction of a former age disappears. It is well therefore that before it is too late there should be a record of our ancient bridges and we welcome the work to which the Society for the Protection of Ancient Buildings has put its hand.

Mr Jervoise has spent four years in surveying the whole country and has collected a great deal of information which it is valuable to have on record. The present volume is the first of the series to be published as the result of his investigations and includes the area comprised by the counties south of the Thames with the exception of Devon and Cornwall. The latter are omitted as accounts of their bridges have been written. In addition to a description of each bridge Mr Jervoise includes historical particulars obtained from the public records and local sources, and with the addition of photographs he gives us a most useful fund of information about a subject upon which little has hitherto been published.

ROCHESTER BRIDGE, 1387-1856: a history of its early years compiled from the Wardens' Accounts. By M. JANET BECKER, with a foreword by S. C. RATCLIFF, secretary of the Historical Manuscripts Commission. *Constable*, 1930. pp. xvi, 123, and 10 plates. 10s.

While the work noticed above deals with existing bridges Miss Becker's book is confined to the history of one which was demolished after a life of nearly 500 years. By good fortune the wardens' account rolls from 1398 to 1479 are preserved and these have provided information of which nothing of the kind has been printed before in such complete form. The bridge chapel, the lands with which the bridge was endowed, its maintenance, and the wardens and their administration of the trust property, are fully dealt with, and the book is an admirable example of the interest which can be extracted from local archives.

---

Owing to great pressure on our space several reviews in type have to be held over.